THE physical therapy REVIEW

Neurosurgical Consideration of Pain — FRENCH

Pain Associated with Cerebral Vascular Accidents
- First Case History — HOFKOSH
- Second Case History — McFARLANE
- Third Case History — PERDUE

Methods of Heating the Hip Joint — BRUNNER, McMILLAN, and LEHMANN

Professional Income of Physical Therapists: A Sampling Study of Personnel Policies

Suggestions from the Field — BROWN

Volume 39, Number 11 **November 1959**

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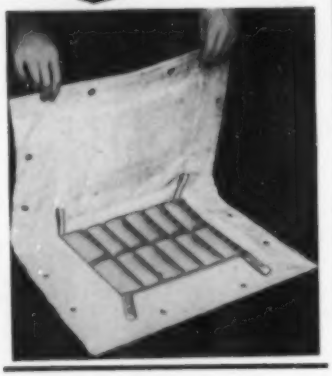

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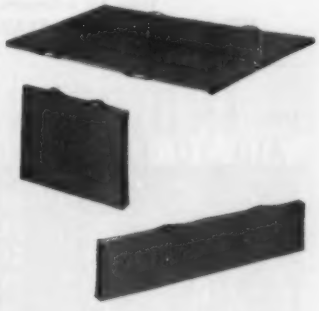

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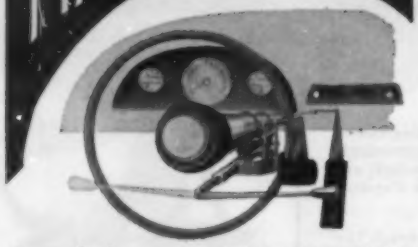

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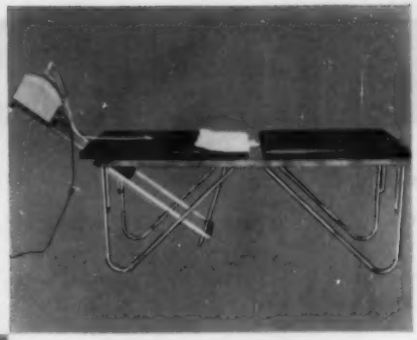
(1) Judovich, Bernard B.—JOURNAL-LANCET Vol. 74, No. 10, p. 411, October 1954



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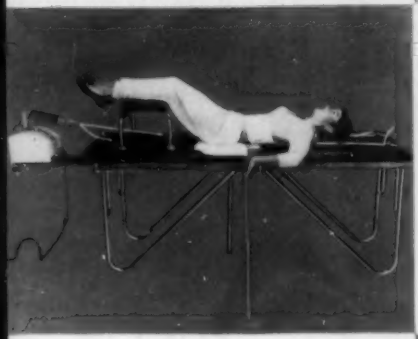

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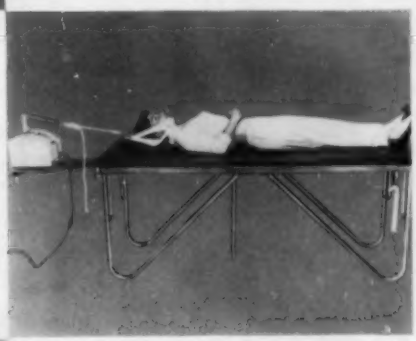

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Braaf, M. M. and Rosner, S.—NEW YORK STATE JOURNAL OF MEDICINE, Vol. 55, No. 2

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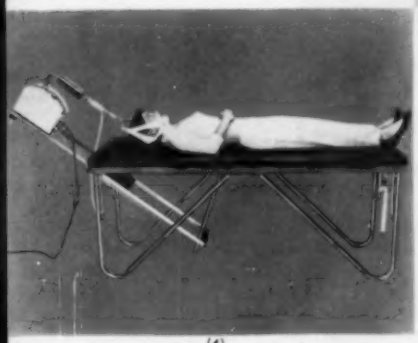

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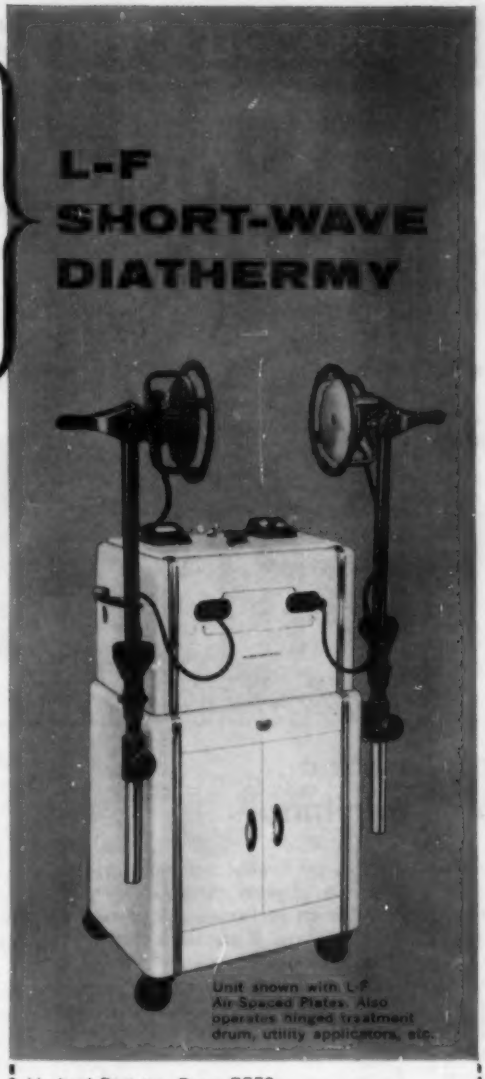

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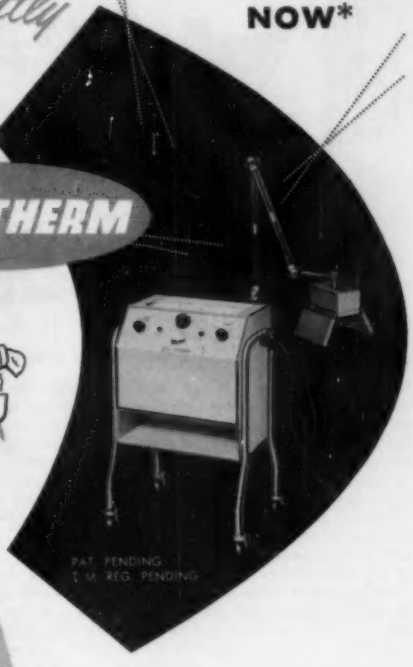

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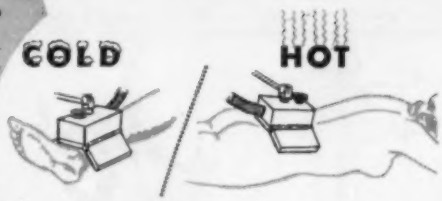

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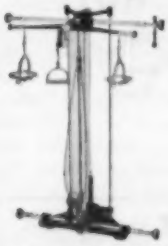

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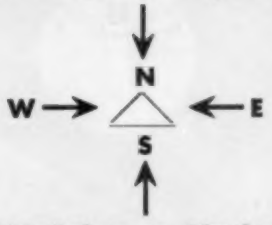

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Kentucky†: Semiannual examinations, April and October. File application by March 1 or September 1. Apply to Agnes Shehan, Sec., State Board of Physical Therapy, Kentucky Crippled Children Association, 982 Eastern Parkway, Louisville 17. Examinations held in Frankfort.

Maine: Thrice yearly examinations. March 10, July 14, November 10. File application 10 days in advance. Apply to Adam P. Leighton, M.D., Sec., Medical Examining Board, 142 High St., Portland. March and November examinations held at Portland City Hall, Portland; July examination held at State House, Representative Chambers, Augusta.

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Tennessee†: Annual examination, second Monday in June. File application one month in advance. Apply to State Board of Medical Examiners, 1635 Exchange Building, Memphis. Examinations held in Nashville.

Vermont *†: Next examination will be held Oct. 24, 1959. Apply to Sophie Myers, Sec., Board of Physical Therapy Registration, Degoesbriand Memorial Hospital, Burlington.

Virginia: Semiannual examinations, February and September. Apply to State Board of Medical Examiners, 631 First St., S.W., Roanoke. Examinations held at Medical College of Virginia, Richmond.

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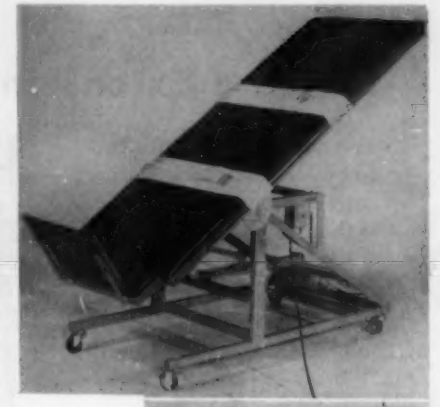

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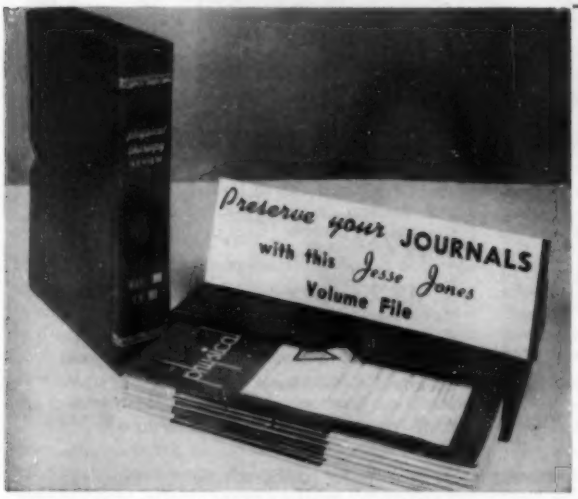

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Neurosurgical Consideration of Pain*

Lyle A. French, M.D., Ph.D.

This report concerns the use of neurosurgical procedures for the relief of pain arising in various regions of the body. An appreciation of the advantages and limitations of these procedures necessitates an understanding of the anatomy and physiological mechanisms involved in pain conduction. For this reason, a few of the pertinent facts are reviewed. Impulses subserving pain arise in naked nerve terminals that are specific for pain perception. These are scattered throughout the skin, subcutaneous tissues, and viscera. The pain impulses are transmitted through either myelinated on nonmyelinated fibers and go (1) directly through somatic nerves to the posterior root ganglion (somatic afferent fibers) or (2) indirectly in sympathetic nerve trunks through the sympathetic ganglia, then via the white rami communicantes to the posterior root ganglia (visceral afferent fibers). The cell bodies of all sensory nerves lie in the posterior root ganglia. Pain conducting fibers (the axons of dorsal root cells) enter the spinal cord through the lateral division of the dorsal root and ascend a short distance (about two segments) in the dorsolateral tract of Lissauer to synapse in the substantia gelatinosa Rolandi. The neurons of the second order cross almost immediately through the ventral commissure to the opposite side and gather as a rather compact, discrete bundle of ascending fibers (the lateral spinothalamic tract) in the anterior half of the lateral funiculus. As the lateral spinothalamic tract ascends, fibers from each higher segment are added to its ventromedial border so that in the cervical region the most posterior and lateral fibers are from the sacral segments, with the lumbar, thoracic, and cervical fibers forming successively anterior layers. For this reason, an incision into the tract which misses the more posterior fibers will leave intact some sacral innervation, while an incision which is not carried far enough anteriorly will miss fibers from the higher segments. The spinothalamic tract then traverses up the cord to the ventral-lateral nucleus of the thalamus and thence to the postcentral area of the cerebral cortex. Some phylogenetically older fibers appear to travel in the spinotectal tracts to end in the roof nuclei of the mesencephalon or possibly the reticular activating system in the brain stem.

Appropriate stimuli applied to any body structure equipped with pain endings may give rise to the sensation of pain. Nerves which subserve pain impulses continue to conduct this sensation as long as the stimulus is applied. There is no true adaptation for painful stimuli as there is for touch. This is an important factor to consider in the clinical management of patients.

Sensory nerve fibers have been classified according to their size and according to the speed with which they conduct impulses. Erlanger and Gasser[2] found that these two classifications,

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anatomical and physiological, correspond. The large myelinated fibers, ranging up to 20 micra in diameter, conduct at speeds up to 100 meters a second. They have been designated as Class A fibers. Class B fibers are also myelinated but smaller (less than 3 micra in diameter) and conduct impules at a rate of 3–14 meters per second. Class C fibers are still smaller, are unmyelinated, and conduct impulses at less than 2 meters per second. The existence of both fast and slow pain sensation can be demonstrated clinically. The application of a single stimulus may be followed by two distinct flashes of pain, one coming almost at once and the other after a discernible delay. The second may be more intense and prolonged. The sharp lancinating pain appears to be carried in the large, rapidly conducting, myelinated fibers; the burning type pain seems to be carried in the fibers of smaller size which conduct more slowly. Aching pains in muscles, bone, and viscera are carried mainly in the sympathetic chains presumably by both myelinated and unmyelinated fibers of varying size.

Referred pain is the term given to the phenomenon in which pain is experienced at a site other than that of the original stimulus. It is attributed to a misinterpretation of the site of origin of the stimulus. In general, the more intense the noxious stimulation, the more widespread is the area of reference; i.e., the greater the central spread of excitation. This central spread of excitation may also lead to a condition in which sensory impulses coming in from the referred segment at their usual threshold values seem more intense and more persistent than they otherwise would. For example, noxious stimulation in the area of referred pain is often productive of more discomfort than similar stimulation of an uninvolved region (Wolff and Wolf[1]). This is one manifestation of the phenomenon of *hyperalgesia*. Such hyperalgesia may follow noxious stimulation of either superficial or deep structures and may even be observed clinically as *local tenderness*. Not only do pain sensations arising from noxious stimulation in an area of referred pain appear intensified, but also do sensations arising from sensory stimuli in other areas of the body. This central reinforcement of sensory impulses other than those subserving pain can be illustrated by the intensification of a primary pain sensation by a light touch sensation applied elsewhere to the body; e.g., a light touch stimulus applied to a finger that is irritated by a splinter. Another example is the accentuation of pain in an extremity by the application of a light stimulus to an eye or by a loud noise. The hyperalgesia and hyperesthesia arising from accentuation of the effects of sensory impulses originating in the tissues of a segment involved in a process of referred pain may even constitute the principal element of discomfort from a given disease.[1] Local anesthetization with procaine of the superficial tissues in the area of referred pain may reduce the patient's discomfort by blocking impulses arising in the skin, but it will not eliminate all pain since it does not interrupt the central spread of excitation from the original stimulus. It is therefore evident that when pain results from the persistence of a primary deep or visceral stimulation, its intensity may be modified by either superficial or deep procaine infiltration or both; but it is not entirely eliminated until the primary afferent impulses are stopped. This is the reason for the disparity in the findings of investigators who have injected procaine into the superficial tissue of areas of referred pain.[1] The motor system may also be involved—associated muscle spasm may complicate the localization of pain and even intensify it. Irritation of a peripheral nerve by movement of a joint involved with periarticular fibrosis may cause spasm of muscles at a distance from that joint. Eventually the pain from the contracted muscles may even overshadow the primary joint pain.

To summarize, there are three types of pain: (1) True somatic pain which is felt at the site of primary stimulation. It may be eliminated by infiltration of procaine into the site or origin of the noxious stimuli or by blocking its afferent nerves. It is not altered by infiltration of procaine into other structures supplied by the same or adjacent neural elements. (2) Referred pain which may occur in addition to or even in the apparent absence of the true somatic pain referred to in (1). This referred pain is experienced at a site other than that of original stimulation but in tissues supplied by the same or adjacent neural segments. It may occur either with or without associated hyperalgesia or hyperesthesia. In the former, the pain depends only on the effects of the central spread of excitation of the original noxious impulses to the same and adjacent segments of the cord once they are related to higher centers for perception and interpretation. Injection of procaine into superficial or deep regions of referred pain obviously does not reduce the intensity of the pain in this instance. However, when it is associated with superficial and/or deep hyperalgesia the pain may be accentuated in intensity by virtue of the effects of ordinarily non-noxious stimuli from the "referred area." A procaine injection into

the superficial areas will abolish this element of the referred pain phenomenon resulting in more or less reduction of the patient's discomfort depending on the amount of hyperalgesia. (3) Pain due to secondary skeletal muscle contractions which provide a fresh source of noxious impulses. Such disturbances are widespread and the pains may be experienced in areas far removed from the original source of noxious stimuli. Local infiltration of the contracted muscles with procaine abolishes this type of pain by disrupting its peripheral mechanism.

Another type of pain is the so-called "*central pain*" characteristic of lesions of the thalamus or spinothalamic tracts. In this type there is a complaint of constant discomfort and dysesthesia in an area of the body. The mechanics of productions of this type of pain are uncertain. It has been postulated (Kendall [3]) that there is a normal inhibitory effect on the cortical-thalamic impulses exerted by the rapidly conducting (myelinated) spinothalamic fibers. When they are interrupted the uninhibited impulses traveling in more slowly conducting (unmyelinated) spinothalamic fibers may give rise to a sensation of greater intensity than usual. In any event, it has been demonstrated that patients with central type pain from thalamic lesions actually have an elevated threshold for the rapidly conducted pricking type pain.

SYMPATHETIC NERVE BLOCKS AND SYMPATHECTOMY

By definition the sympathetic nervous system is visceral efferent (motor) in function. However, traversing along with these visceral efferent fibers, in the same nerve bundles, are visceral afferent (sensory) fibers which may carry pain impulses from the periphery back into the central nervous system (Kunz [4]). The value of blocking with drugs or surgical resection of part of the sympathetic nervous system is as much the interruption of these afferent (sensory) fibers as it is interruption of the efferent (motor) fibers. The clinical effect of these procedures is to permit vasodilation with consequent improvement in the blood supply to the involved area, to produce anhydrosis or dryness of the part, and to relieve pain by interruption of the sensory fibers. It is apparent that procedures on the sympathetic nervous system can be of value for relief of symptoms due to the conditions known as reflex muscular dystrophy. Under this term various related conditions can be grouped. These include the shoulder hand syndrome, post-traumatic painful osteoporosis (Sudecks), post-traumatic vasomotor disorders (edema, atrophy of the skin, ulcerations), post-traumatic arthritis, causalgic syndromes, etc.

Sympathetic nerve blocks are of temporary value to relieve symptoms described as manifestations of reflex muscular dystrophy—these include pain, swelling, cyanosis, coldness, or hyperhydrosis. The blocks *must* be combined with physiotherapeutic procedures to make them of lasting value. In order to obtain maximum value from the nerve block, they should be timed to permit the physical therapist to work with the patient during the effective period of the block. Oftentimes patients may have such severe pain and disability that without a sympathetic nerve block physical therapy cannot be instituted, but with sympathetic nerve blocks, physical therapy can be effectively carried out. With successive exposures to sympathetic nerve block plus physical therapy most of the disabling symptoms can be alleviated. Occasionally it is necessary to perform a surgical sympathectomy to obtain permanent relief of the symptoms. This operation can be very gratifying to a patient disabled with severe shoulder or arm pain, limited movements and edema in the extremity. One word of caution is given; it is wise to start the sympathetic blocks and physical treatment early in the course of development of a reflex dystrophy. One should be alert to the first symptoms of this condition and not await the full development of the syndrome prior to institution of procedures for relief. After the full blown clinical picture of reflex dystrophy has appeared, the measures necessary to obtain relief are infinitely more involved.

POSTERIOR RHIZOTOMY

Posterior rhizotomy or section intradurally of the sensory root of a nerve for relief of pain has been found to have many disadvantages and has been largely supplanted by anterolateral (spinothalamic) cordotomy in the high cervical region. The well known objections to rhizotomy are (1) loss of *all* modalities of sensation which renders an extremity quite useless, and (2) an extensive laminectomy is necessary to cut all the sensory roots to a painful area. Its use, therefore, is largely confined to the upper cervical and thoracic segments of the cord. Rhizotomy of the posterior roots of the upper three cervical nerves can be combined very easily with a tractotomy of the descending tract of the trigeminal nerve and section of the glossopharyngeal nerve intracranially. These procedures are especially useful for relief of pain due to carcinoma of the oropharynx

and neck. Rhizotomy in the thoracic region is done most frequently to relieve the pain of intercostal neuritis that may follow a thoracotomy. A posterior rhizotomy, of course, should not be done to denervate a painful joint as long as some usefulness exists in the joint because such a procedure removes all modalities of sensation.

CORDOTOMY

One of the best procedures used for pain relief is cordotomy done in the high cervical (C_2) area (French [5]). It is applicable for relief of pain occurring anywhere in the body below the fourth cervical dermatome. Its use, of course, is restricted to those patients whose pain is severe and intractable, chronic, and not relieved adequately by infiltration of analgesic agents or by local rhizotomy. The incision into the cord cuts the spinothalamic tract so that pain and temperature modalities are interrupted.

The procedure can be carried out either under local or general anesthesia. The patient is placed in a sitting position for unilateral cordotomy but if bilateral cordotomy is done, a horizontal position with the patient on his abdomen is used. The reason a horizontal position is used in patients undergoing a bilateral cordotomy is that severe hypotension may accompany the second incision, and if the patient is in a horizontal position this hypotension is much easier to control. If local anesthesia is used the level of sensory loss can be tested as one extends the incision into the cord. This may help to insure an adequate sensory level without "islands" of retained sensation; however, such testing really is not necessary after the surgeon has accustomed himself to the procedure at this level.

For a unilateral cordotomy a hemilaminectomy of the first and second cervical vertebrae is accomplished. The dura is opened and an incision into the cord at the second cervical cord level is made. The incision is approximately 5 mm. deep. It sections the anterolateral part of the cord; i.e., the area anterior to the dentate ligament. If a bilateral high cervical cordotomy is done the only variation from the above is to do a laminectomy on the opposite side at the C_3 level and make a comparable incision into the cord. When the contralateral cord incision is made in the upper thoracic level, the laminectomy is done of the T_1-T_2 vertebrae.

SUMMARY

A general review is given of the physiological basis of pain perception. Various neurosurgical procedures are described, giving the advantages and disadvantages of each. The application of these procedures is discussed.

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How to Arrange to Borrow a Print of *The Return*

A complete listing of the film libraries where the Association's latest film is on deposit may be found on page 99 ff. of the February, 1959, issue of the *Physical Therapy Review*. If the film library nearest you cannot supply you on the date you need *The Return*, look through the list to see if another library will service your state. National Office will send you a print if it is unavailable locally. In addition to the 38-minute version, there is a TV version running 28 minutes. There is also a 58-second TV spot with sound track, excerpted from *The Return*. Both of these are available for borrowing from the National Office. *The Return* was chosen by Howard Thompson of *The New York Times* as one of the 10 best nontheatrical films of 1958.

*Pain Associated with Cerebral Vascular Accidents**

First Case History

Jack M. Hofkosh, M.A.

A 60 year old single, male law professor entered the Institute of Physical Medicine and Rehabilitation on Oct. 20, 1958, with a diagnosis of cerebral vascular accident with right hemiplegia and aphasia since July 29, 1958. The patient was in good health until July 12, 1958, when he had a sudden onset of crushing substernal pain. He was seen by his local physician who reported findings by electrocardiograph as negative. The pain subsided and the patient continued his daily work. Two weeks later, July 26, upon recurring pain and increased fatigue, he was seen by a cardiologist who diagnosed a myocardial infarct due to coronary artery occlusion. At that time the patient was admitted to Montefiore Hospital and put on bed rest and an anticoagulant, dicumarol, was given. His prothrombin time was reported at 30. Two and one-half days later, July 29, he had a sudden onset of aphasia and complete paralysis of right arm and leg. Dicumarol was discontinued, and he was maintained "flat in bed" until September 5. Since then he had been sitting up for periods as long as one and one-half hours two times daily. The patient was placed on a regimen for convalescent coronary patients with mild physical therapy to prevent further deconditioning.

Physical Examination

Upon admission to the Institute of Physical Medicine and Rehabilitation on Oct. 20, 1958, the physical examination revealed a well developed, well nourished white male, cooperative but aphasic, in bed with pulse count of 100, blood pressure reading of 118/74. Physical findings relative to the physical therapy program, subsequently instituted: Muscle examination of the right lower extremity revealed no musculature graded below poor, with hip musculature graded fair to fair+, knee poor+ to fair−, ankle fair−, foot and toes poor+ to fair+. The right upper extremity was too painful to touch, making muscle testing impossible. The range of motion test of the right lower extremity revealed: 40 degrees limitation in straight leg raising; 15 degrees limitation in hip flexion with bent knee; 25 degrees limitation in internal rotation—with all other ranges essentially within normal limits. The range of motion of the right upper extremity could not be measured because of severe pain. Due to atrophy, the circumference of the middle third of the right thigh was almost 1 inch less than on the left, as was the measurement of the middle third of the right lower leg. (The left arm and leg were within normal limits throughout.)

Laboratory Data

Within normal limits except for pyuria due to indwelling catheter necessary because of prostatic hypertrophy.

Hospital Course

Following an evaluation of the patient, he was referred to the departments of Physical Therapy and Activities of Daily Living on October 23. The prescribed program of treatment was as follows:

1. Steam packs for heat to right upper extremity to be followed by range of motion exercises;
2. Muscle reeducation with manual resistive exercises where indicated, to right lower extremity;
3. Muscle reeducation to right upper extremtiy;
4. Hubbard tank followed by range of motion exercises;
5. Progressive resistive exercise to unaffected side;
6. Activities of daily living retraining.

Because of tachycardia of 140 and fine rales in his chest, the patient was seen in consultation by an internist. It was agreed that the patient had a mild degree of congestive failure. The internist recommended a regimen of Digoxin .5 mg daily, and 2 mg of Decadron for pain and 10 mgms of Ritalin daily to relieve the patient's depressed state which interfered considerably with progress.

The scheduling of his classes was graduated, keeping in mind the recentness of his myocardial infarct and the short time since his cerebral vascular accident.

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* This case report and the two that follow were presented at the Annual Conference of the American Physical Therapy Association, Minneapolis, June, 1959.

This program was continued until November 20, at which time the patient was reevaluated. His progress in physical therapy had been slow with only slight increases in range of motion in the right lower extremity. The affected right upper extremity continued to be painful to touch and his hand remained somewhat swollen although pain was centered in the shoulder joint and arm. It was decided at the reevaluation conference that the pain had been relieved very little and that stellate ganglion blocks might be tried. This was done with Cyclane 1 per cent 10 cc. at each instillation 3 times weekly for 3 weeks with the anesthetist reporting a good response. After each instillation, there followed a period of marked diminution of pain lasting only a few hours, during which time the patient tolerated passive range of motion up to 40 degrees flexion, 60 degrees abduction, and 20 degrees internal rotation of the shoulder; elbow flexion and extension and wrist extension could be moved through a range of 20 degrees. All other ranges of the right upper extremity continued to be too painful for passive stretching. Treatment in the Hubbard tank was discontinued and replaced with another period of steam packs and passive range of motion.

The revised regimen was continued until the next reevaluation on December 18. There was improvement in the patient's ability to stand, to balance, and he could now bear full weight on the affected lower extremity. He received range of motion and muscle reeducation to the affected extremities but continued to suffer from pain in the right shoulder to the extent that it could not be moved within the range of motion which was present during the initial phases of treatment.

The physical therapy program was continued for the next three months with little change in the patient's attitude, performance, or pain tolerance. He still has no active motion of the right upper extremity except as may be elicited on shoulder shrug. The passive range of motion, however, at last report of April 30 was as follows:

Shoulder flexion	90°
External rotation	10°
Internal rotation	80°
Abduction	80°
Elbow extension	180°
Flexion	120°
Wrist extension	20°
Wrist flexion	30°

The muscle power of the right lower extremity was graded as:

Hip flexion	Fair + Good −
Hip extension	Fair −
Hip abduction	Poor +
Hip adduction	Poor +
Hip external rotation	Poor −
Hip internal rotation	Poor +
Knee extension	Fair−
Knee flexion	Poor
Ankle	Fair−

Range of motion of joints of the involved lower extremity was within normal limits throughout except that internal rotation of the hip was limited 45 degrees, and ankle dorsiflexion was limited 20 degrees.

Functionally his standing tolerance has increased to a full three fourths of an hour of full participation including standing balance, walking between parallel bars and, to date, four sessions of assisted ambulation outside the parallel bars. In activities of daily living he is now able to do transfers to and from toilet, bed, and chairs but must be reminded of each procedure; there is no carry over from day to day.

The patient has been and continues to be a problem to the staff, not only because of his pain but also because of severe brain damage and profound depression. Decadron was discontinued because of its ineffectiveness. A new mood-elevating drug JB.516 (a marsilid-like preparation) was recently added to his medications and some improvement in attitude has been observed so that the patient now tolerates more intensive physical therapy.

Second Case History

Margaret McFarlane, M.A.

Prior to receiving physical therapy, the patient, a 71 year old male, and his wife had been cared for on Hospital Extension Service which is the home care program of King County Hospital in Seattle. The patient had a diagnosis of arteriosclerotic heart disease and herpes zoster; his wife had received home care following hospitalization for a myocardial infarct. The patient had been married for nearly 50 years. His wife, aggressive and controlling, had apparently made many of the family decisions. Financial aid from the State Department of Public Assistance, which included provision for limited housekeeping service, had enabled the couple to maintain their own small home.

On Jan. 1, 1956, the patient was admitted to King County Hospital in a semicomatose condition, following a thrombosis of the left middle cerebral artery. With supportive therapy, there had been minimal improvement. Two weeks after admission, reexamination revealed a complete right hemiplegia, right facial weakness, and aphasia.

On February 8, the patient was discharged to his own home under supervision of Hospital Extension Service. Placement in a nursing home had been considered, but the patient's wife wished to have him at home. A friend of the family with some practical nursing experience was employed to live in the home and care for the patient.

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Two weeks after the patient's discharge from the hospital, physical therapy was ordered by the Hospital Extension Service physician. At this time, the patient was spending his entire day in bed. The attendant, under close supervision of the wife, was giving complete care to the bedridden patient. Care included bathing, turning, and feeding.

The patient could not move his upper right extremity. In his right lower extremity there was beginning return of power in all muscle groups, but no motion was graded above "fair." The patient could actively lift his right lower extremity, with knee extended, approximately 6 inches from the bed.

There was moderate limitation in range of motion on the right in shoulder abduction and external rotation, forearm supination, finger flexion at all joints, and in hip internal rotation. There was also moderate tightness in both hamstring groups. Edema of the right hand appeared quite marked.

The patient complained of pain, particularly at the end of passive ranges of motion in the right shoulder and hand. He seemed to comprehend language fairly well. He could say several words and phrases, but frequent failure to say the "right" word produced frustration.

The goals of the home physical therapy program were: (1) improved range of motion and muscle strength, (2) self-care activities, including feeding and toilet, (3) independent bed activities such as turning and coming to a sitting position, (4) daily wheel chair activities, including transfer, and (5) eventually, ambulation.

With these goals in mind, the physical therapist instructed the attendant in simple exercises to be given twice daily, and in positioning of the patient. She also taught the patient and attendant procedures aimed at independence in activities of daily living.

The patient seemed interested in the exercise program and anxious for improvement. However, several factors appeared to hinder progress. For example, the patient seemed apprehensive of pain. He tended to whimper and cry with all exercises of the upper right extremity. Apparently, shoulder pain often persisted for a few hours following exercise. He also had bilateral cramping in his leg muscles which began about one month after initiation of the therapy program and occurred two or three times a week for several weeks. The edema of the right hand limited flexion of the digits. In addition to pain and edema, the patient had symptoms of aphasia, fatigue, lethargy, emotional lability, incoherence, and disorientation. All of these were present at one time or another, and appeared to influence his response to physical therapy.

The patient had a tendency to fall backwards and was therefore apprehensive of falling. Even though muscle testing revealed that a particular active motion was present, he did not always perform the desired motion in response to direct command. He sometimes seemed to ignore the affected body part. This posed a problem when we first began standing and ambulation activities, for the patient refused to place his right foot on the floor. Also, his wife continued to be protective and to do things for him. Sometimes, too, she stopped the exercise program as given by the attendant, when the patient complained of pain or fatigue. All these factors were recognized and were discussed by home care staff members.

Measures were taken to alleviate the problems and facilitate the patient's progress. The physician ordered hot, moist packs to the right shoulder twice daily prior to exercise. The patient was encouraged in self exercise as much as possible. An improvised tricycle exerciser encouraged the patient to exercise his own lower extremities. Medications prescribed by the physician were Metrazol (later changed to Meprobamate) and Benadryl. Pillows were used to elevate the upper right extremity. A low bed was ordered so that the patient could get out of bed more easily. We endeavored to direct the wife's activities toward helping the patient to help himself rather than doing things for him.

The patient continued to complain of shoulder pain. Edema, though subsiding, was still present. He was easily excited and seemed apprehensive about many things. He demonstrated concern when his wife did not feel well. Nevertheless, there was slow progress. After the first week of physical therapy, there was a beginning return of active motion in the upper right extremity. After seven weeks of home therapy, the patient was being assisted into the wheel chair nearly every day. By pushing a chair, and with considerable assistance, he was taking a few steps.

On April 15, the patient's wife had a myocardial infarction and expired suddenly.

It was now impossible to provide a suitable home situation, and arrangements were begun for nursing home placement. The patient now demonstrated real concern about possible cessation of physical therapy and showed great eagerness to cooperate in every part of the exercise program. Because physical therapy would not be available in the nursing home, he was returned to the hospital for intensive therapy. Shoulder pain and edema of the right hand continued in the hospital. After several weeks of daily physical therapy, he was walking with a cane, and he was discharged to a nursing home.

Today, three and a half years after the cerebral vascular accident, the patient is living quite happily in a "board and room" situation. His upper right extremity is not functional, but he ambulates safely with a cane. Except for minimal aid with tub bathing, he is independent in self care.

For this particular patient, pain and the fear of pain, coupled with the wife's attitude toward the patient's complaints, seemed to deter progress.

(Third Case History follows on next page)

Third Case History

Wayne Perdue, B.A.

This case report is presented in order to describe a fairly typical development of hand-shoulder syndrome following a cerebral accident. Records of previous hospitalization were not obtained and the information received came from the wife.

S. T., a male business executive, 56 years of age, suffered a cerebrovascular thrombosis at 3:00 P.M., March 8, 1959, and was admitted to another hospital immediately where treatment for the acute phase of the accident began. The patient had been hospitalized in June, 1958, for angina pectoris. In December, 1958, the patient had been readmitted for 10 days following another episode of coronary distress, but no diagnosis of occlusion could be made. On March 8, the patient was admitted for a third time. The patient was never comatose; however, he was completely aphasic, disoriented, and had a flaccid paralysis on the right side of his body. Oxygen, sedatives, and anticoagulants were administered, and the patient was maintained with 24 hour nursing care for a period of three weeks. He has been mildly diabetic for six years.

On March 30, 1959, S. T. was transferred to the Nebraska Methodist Hospital at the request of his wife. A few days later, his original physician, who was not on our staff, referred the patient to a member of our staff in order to maintain close observation during the convalescent period. At the time of evaluation, the patient was found to have a motor aphasia and a hemiparesis on the right. He communicated effectively by the use of sign language. He was alert, his blood pressure was 120/70, pulse count was 82, respiration count was 20. There was a slight flaccidity of the facial muscles. The hand, arm, and shoulder were apparently involved as were the shoulder girdle muscles except the pectoral muscles which were at a functional level. The abdominals and trunk extensors were normal. The abductors of the hip and peroneii seemed to be paralyzed; adductors of the hip, invertors of the ankle, and his knee extensors were graded functional. Hip extensors were graded about "good minus," and the hip flexors were nearly normal. Reflexes were hyperactive throughout and Babinski reflex was not present. Upon sitting, nystagmus was absent and his equilibrium was good. Weight could be borne upon the affected leg fairly well. Standing balance was fair, but upon attempting movement of the leg, the patient would use the typical pattern of circumduction and adduction of the hip with inversion of the foot.

The attending physician prescribed massage to the affected side, active and passive exercises for maintenance of mobility and strengthening, and ambulation. Starting April 1, ranges of passive motion were given to the scapula, shoulder, arm, and hand both manually and by an overhead pulley device. Reeducation exercises to the upper extremity were started. It was found that the hip abductor could be encouraged to function after a great deal of "coaxing." Manual-resistive, reciprocal exercises, and standing balance were directed at gaining a functional gait. The patient's use of his lower extremity improved at a good rate. He progressed from standing, to walking with one bar, then walking using one crutch with a minimum of assistance. Up to this time, no use was made of any sort of support on the lower extremity. Evaluation of the patient's speech and speech therapy were begun about one week later.

By April 9, finger flexors, elbow flexors, and shoulder adductors were beginning to show at least a trace of function. The finger flexors required a good deal of encouragement, but they were beginning to function. A mild, surging, faradic type of electrical current was used over the extensor groups of the arm for a period of 10 minutes at each motor point. The joints remained quite mobile up to this time, but on April 17, the first signs of pain occurred when the wrist was passively extended to the maximum range. No particular response to pain was noted upon movement of the other joints of the upper extremity. However, the physician in charge felt that the patient was progressing well enough that he could be dismissed from the hospital. Consequently, on May 1, the patient was discharged with instructions to return twice weekly for treatment and observation. His wife, who was not available at the time of dismissal, had only a vague idea of his maintenance program.

Upon his return to the department on May 5, four days later, the hand was quite edematous with pain occurring on extension of the wrist and flexion of the fingers. A moderate degree of pain was noted upon movement in the shoulder joint to about 80 per cent of forward flexion, abduction with the elbow straight, horizontal adduction, and internal and external rotation. The wife was instructed to elevate the hand and arm several times daily after the patient had been up for a few hours. This was to be done by placing him in a supine position with a pillow or bolster under the elbow and with the hand resting upon another pillow on his chest. He was to remain in this position for about 20 minutes. A program of active and passive motion to the joints of the arm was to be continued twice daily. A speech therapist treated the patient in the home twice weekly.

By May 12, the range of motion of the upper extremity had decreased further, but the edema was responding to the elevation of the arm. The patient was so active and eager to get around that his wife found it trying to get all his activities, including the elevation, accomplished during the day. Her courage was strained to the very limits by her husband's violent expression of pain upon

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movement of the arm. Perhaps there was a tendency to do only the things which were comfortable to him at this time.

Since the patient was up and about so much of the day, it was felt that some support of the flaccid shoulder was necessary. On May 14, a hemiplegic support was fitted by the appliance-maker. The shoulder pad was contoured in a manner that prevented it from slipping off, the leather elbow sling was molded, and there were anterior and posterior adjustments to the webbing to allow a more even lifting of the humerus into the glenoid fossa. To remove and reapply it, only one buckle had to be released. The leather hand support was made longer to reduce flexion of the wrist. The wife was instructed in application of the devices and she was warned of the need to maintain good mobility of the joints of the arm and shoulder.

On May 15, the patient was found to have exquisite pain during all motions of the upper extremity including supination of the forearm which, up to this time, had not been bothersome. There was limitation of passive digital movements. Active motion could not be produced. There was tenderness of the skin, massive swelling, and an ashy-blue coloration of the skin over the dorsum of the hand with redness of the palm. The gait pattern continued to improve witihout the application of a supportive device.

An interview with the wife on May 25 disclosed that she was spending a great deal of time and wasted effort trying to alleviate the pain by frequent and extensive massage of the extremity and application of heat with movement of the joints through only a comfortable range of motion. So much time was being spent, in fact, that household duties were almost completely disregarded. It was explained to her in definite terms that we felt that as much motion should be accomplished during a single short session as possible, and to perform at least four very short sessions a day. It appeared that his pain was soon going to become continuous, so although pain was severe for the short time the exercises were being done, if we gained motion, the pain shouldn't become constant. The wife discarded her superfluous efforts that week and an intense effort to gain full range of motion was made. Affairs in the house were beginning to be restored to a more normal level, which in turn, improved the wife's state of mind.

By May 29, there was an astonishing reduction of pain upon movement of the shoulder joint. There was full range of motion upon the first repetition of movement with no comment from the patient who previously had been quite expressive. The edema of the hand was lessened to the point at which active motions of flexion could be resumed. Many of the accomplishments of reeducation had been lost, but on this day, we were able to resume with the extensors of the fingers.

The first signs that stability of the shoulder joint might return appeared June 1. Middle deltoid and anterior deltoid, with some "coaxing," were graded at 4 (good); scapular elevators, serratus anterior, and elbow flexors were rated about 3 (fair). There still was only a trace of power in the finger flexors. The redness of the palm had decreased somewhat. The patient no longer complained of pain during motion. Flexion of the wrist was becoming somewhat hyperactive on any attempt at movement.

S. T. was quite depressed on June 5. His wife stated that he had had another minor "stroke" the night before. However, the new motions of June 1 were improving, although there was still some limitation of the finger joints.

On June 8, the redness of the palm was reduced, some edema of the fingers remained, but there was more active use of the shoulder joint.

The hand-shoulder syndrome as demonstrated by this patient is not at all uncommon in the cerebrovascular accident. The treatment of this particular case, as far as it has gone, was fairly successful. Six weeks after the first signs of the syndrome appeared, the pain was no longer a major problem to the patient. As the pain increased, more attention was given to regaining the range of motion and, as it turned out, the duration of pain and limitation of motion were relatively short. The severity of the case could be described as moderate. As the state of the apparent thalamic injury improved, so did his physical state. He still tends to ignore his affected side and uses it only when he is encouraged to do so.

Help Fight TB

Use Christmas Seals

Methods of Heating the Hip Joint*

George D. Brunner, B.S., Jo Ann McMillan, B.S., Justus F. Lehmann, M.D.

The utilization of various heating modalities is an essential part of the therapeutic approach to many forms of hip joint disease. The therapeutic effects obtained through these heating modalities depend for the most part on the heat distribution that they produce. In conductive type heating, the highest temperatures are produced in the most superficial tissues. With any rise in temperature in these tissues, some mild physiologic and therapeutic reactions may be obtained reflexly in the tissues surrounding the hip joint. In conversion of electric currents, electromagnetic radiation and acoustic radiation, highest temperatures are produced in the deep layers of of the tissues.

Desired reactions, including increased extensibility of fibrous tissues, are dependent upon a therapeutic rise of temperature in the hip joint.[1] If the highest temperature produced throughout the tissues could be in the hip joint, the danger of burning other areas would be eliminated. Then, by varying the dosage, the hip joint temperature could be varied within the therapeutic range.

In order to determine which of the available diathermy modalities are most efficient in raising the temperature of the hip joint to a therapeutic level, the following study was done. Adult pigs, weighing from 100 to 180 pounds, were selected for the experiment because of their similarity to man in size and tissue composition. Using aseptic surgical technic, a pilot hole was drilled through the cancellous bone of the femoral neck. A hypodermic needle housing a thermistor bead was inserted through the hole into the fibrous capsule over the anterior aspect of the hip joint. The position of the thermistor bead was confirmed during autopsy at the end of the experiment.

Ten days after surgery, the pigs were given therapeutic dosages of ultrasound, microwave, and shortwave diathermy. In the application of the microwave treatment, the C-director was spaced 1 to 2 inches from the skin surface, and a power output of 50 to 80 per cent was maintained for the duration of the treatment. In order to minimize the induction of a high frequency current in the shielded wires and thermistor needle, they were alined parallel to the magnetic field vector. In the case of shortwave, a drum was used for treatment at a spacing of 1 to 2 inches from the skin surface, and the output of the machine was held at 90 to 110 milliamperes. The same precautions were taken in the alinement of the drum in relation to the needle and wires. No appreciable rise in temperature occurred in the hip joint when shortwave and microwave diathermy were applied. However, with ultrasound it was possible to raise the temperature to any desired level. The temperature reached was dependent on the ultrasonic intensity. The ultrasound generator used for these experiments had a radiating surface of 12.5 watts per square centimeter.

In one group of experiments, the thermistor head was inserted into the far side of the hip joint with the femoral neck positioned between the ultrasound applicator and the thermistor bead. Even in this location, a definite rise of temperature was obtained. However, it was much less than that produced in the area of the joint directly exposed to ultrasound, indicating that it would be advisable to treat the hip joint in man from all accessible aspects.

Table I shows the pretreatment and treatment temperatures for each modality studied and shows the *t* test comparisons of the amount of change. The *t* test used the matched pairs method.[2] The findings given in Table I show that for every modality a statistically significant effect occurred. The fact that each modality has produced a significant effect on temperature proves only that something consistent happened under the experimental conditions. It does not prove that the effect has therapeutic value.

Table II shows the comparisons of each modality on the amount of change in temperature which occurred under the treatment conditions. The data show, with one exception, all conditions of ultrasound have a significantly greater effect

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* Presented at the Annual Conference of the American Physical Therapy Association, Minneapolis, June, 1959.

TABLE I

RISE OF TEMPERATURE IN CENTIGRADE IN HIP JOINT DURING APPLICATION OF DIATHERMY

MODALITY	DURATION OF TREATMENT		PRE-TREATMENT	TREATMENT	AMOUNT OF CHANGE	t	p
MICROWAVE	20 min.	N	17				
		Mean	39.56	39.68	.10	4.651	.01
		S.D.	.347	.316	.088		
SHORTWAVE	20 min.	N	11				
		Mean	40.05	40.35	.30	6.97	.01
		S.D.	.139	.174	.136		
ULTRASOUND - 1 ($1.5\text{-}2.0$ w/cm^2)	5 min.	N	6				
		Mean	39.79	41.22	1.43	6.666	.01
		S.D.	.317	.589	.479		
ULTRASOUND - 2 (2.5 w/cm^2)	5 min.	N	12				
		Mean	39.62	43.63	4.01	20.397	.01
		S.D.	.420	.585	.660		
ULTRASOUND - 3* (3.0 w/cm^2)	10 min.	N	7				
		Mean	39.34	39.82	.48	7.418	.01
		S.D.	.505	.410	.060		

* Thermistor located in far side of joint being treated.

at the 1 per cent level of confidence than do either microwave or shortwave. In the one exception where the thermistor was located in the far side of the joint capsule under treatment, ultrasound produced a significantly greater effect at the 5 per cent level.

The absolute temperature changes under microwave and shortwave are quite slight. These results could be due, in part, to the induction of a high frequency current in the thermistor bead. Even if that is not the case, such minimal changes have no therapeutic value. Only in the instance of ultrasound does the treatment temperature rise to a level above 41 degrees C. The position is taken here that unless treatment temperature reaches the range of 41 to 44 degrees C., little or no positive therapeutic effect is achieved.

Previous investigations have shown that joints covered by relatively small amounts of soft tissue may be heated significantly by microwave and shortwave diathermy.[3,4,5] However, these modalities are not effective in heating structures

TABLE II

t TEST COMPARISON OF MODALITIES ON AMOUNT OF TEMPERATURE CHANGE

	SHORTWAVE	ULTRASOUND $1.5\text{-}2.0$ w/cm^2	ULTRASOUND 2.5 w/cm^2	ULTRASOUND 3.0 w/cm^2
MICROWAVE	4.819**	10.5220**	23.26**	8.165**
SHORTWAVE		6.884**	18.377**	3.042*

* 5% Level of confidence

** 1% Level of confidence

relatively deep in the tissue.[6,7] The exception to this is pelvic diathermy utilizing internal electrodes.[8]

These experimental findings indicate that the best available method of heating the hip joint in man is by the application of ultrasound over the anterior, superior, and posterior aspects of the hip joint.

The authors wish to express their appreciation to Vilas C. Johnston and to Dr. Jack Blumberg, Department of Surgery, School of Medicine, University of Washington, for their assistance. We are indebted to the Burdick Corporation and Dallons Laboratories, Inc. for providing the equipment for the study.

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Professional Income of Physical Therapists

A Sampling Study of Personnel Policies

A survey of personnel policies including salaries affecting the employment of physical therapists was made by the American Physical Therapy Association in 1956. Seventy-nine per cent of the membership responded to the questionnaire which was sent to all active members of the Association.

Median salaries in relation to types of facilities in which physical therapists were employed as well as status at work and years of experience were published. Based on the study, suggested salary ranges for positions as Staff, Senior Staff, Chief and Director or Coordinator of physical therapy services were proposed and published. Both of these reports[1] have had wide distribution and discussion by many groups.

During the Annual Conference of the Association in June, 1959, a sampling study of current personnel policies was made. The same punch card ("Keysort" card produced by McBee Company) was used as in 1956. Basic earnings before deductions were checked in appropriate ranges from "under $3,000" to "over $10,000." Units of 500 from the range of $3,000 to $3,499 up to $7,000 and units of 1,000 from the range of $7,000 to $7,999 up to $10,000 were used.

Six hundred and fifty-seven physical therapists attending the Annual Conference were given the survey cards and 350 (53 per cent) returned them by Aug. 1, 1959. Physical therapists from 39 States, District of Columbia, and Puerto Rico participated in the study.

The material has been tabulated in ranges but the midpoint in the range was chosen for ease in reporting. Basic earnings were reported in all the ranges from "$3,000 to 3,499" through the range of "over $10,000" with an all inclusive median salary of $5,750.

All salary figures presented are the median salaries for each category. This indicates that 50 per cent of the physical therapists in the specific category are earning salaries more than the figure given and 50 per cent are earning less.

Median salaries and other material pertaining to personnel policies in effect in 1959 are presented in the following tables.

TABLE 1

MEDIAN SALARY RELATED TO TYPE OF FACILITY

		Per cent of Total Number Reporting
General Hospital	$5,750	45.5
Convalescent Hospital	5,250	3
Neuropsychiatric Hospital	5,750	2
Orthopedic Hospital	5,250	2
Crippled Children School	6,250	5
Cerebral Palsy Center	5,750	2
*Treatment Center	5,750	8.5
Rehabilitation Center	5,750	11
Public Health Agency	6,250	7.5
School of Physical Therapy	6,250	8.5
Other	6,750	5

* Including physician's office or outpatient department.

1 See "Professional Income of Physical Therapists: Analysis of 1956 Survey of Association Members," in the February 1957 *Review* (page 83); and "Suggested Salary Ranges for Qualified Physical Therapists," November 1957, page 725.

TABLE 2

MEDIAN SALARY RELATED TO STATUS AT WORK

		Per cent of Total Number Reporting
Working Alone	$5,750	20
Staff Level	4,750	17
Supervisor	6,250	38
Coordinator	7,500	4
Consultant	6,500	6
*Teacher	6,750	12
Other	7,500	3

* Connected with School of Physical Therapy as Director or Instructor.

TABLE 3

MEDIAN SALARY RELATED TO YEARS OF EXPERIENCE

		Per cent of Total Number Reporting
Under 1 year	$4,250	3
1 - 2 years	4,750	6
3 - 5 years	5,250	15
6 -10 years	6,250	28
11-15 years	6,250	28
16-20 years	6,250	10
Over 20 years	6,750	10

TABLE 4

MEDIAN SALARY RELATED TO PRIMARY EMPLOYMENT AUSPICES

		Per cent of Total Number Reporting
Federal Facility	$5,750	11
State Facility	6,250	21.5
City or County Facility	6,250	11
Voluntary Facility	5,750	51.5
Self Employed	8,500	5

TABLE 5

PERSONNEL POLICIES AND PRACTICES REPORTED

Work Week	
Under 40 hours	50
40 to 44 hours	231
44 to 48 hours	32
48 to 54 hours	14
Over 54 hours	16
Total reporting	343
Vacation Per Year	
Under two weeks	9
Two to four weeks	163
Four weeks or more	174
Total reporting	343

Other Policies	*Number Reporting*
Automatic salary increments	111
Merit system for salary increases	100
Salary range established	31
No established plan	40
Retirement plan in effect	157
Sick leave benefits	218

Suggestions from the Field

Blocks for Balance and Posture for the Spastic Patient

Ruth Brown, B.S.

These blocks were designed to fill the need for inexpensive equipment to be used in teaching the spastic patient to walk. They have been used in conjunction with stretching and strengthening exercises to obtain better body alinement for patients who are ambulatory and to hasten the attainment of equilibrium in patients that are not ambulatory.

Blocks of varying thickness and length have been used. Equilibrium is gained by positioning the blocks to help overcome partial contractures of individual patients by redistribution of weight and body alinement.

The blocks are strapped to the shoes with the thick end either front or back as each patient's needs demand. Lateral wedges made in the same way have been helpful in correcting weight bearing in varus and valgus deformities.

These blocks are used prior and in conjunction with shoe corrections and braces. Blocks

Physical Therapy Department, Cabarrus Memorial Hospital, Concord, N. C.

Improved balance and stability in a cerebral palsied child obtained by use of the blocks through increasing plantar flexion.

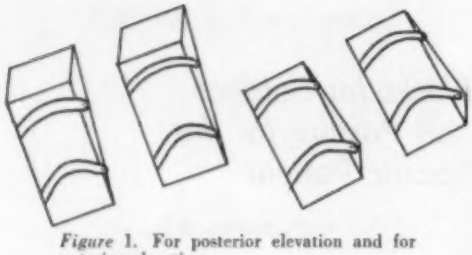

Figure 1. For posterior elevation and for anterior elevation.

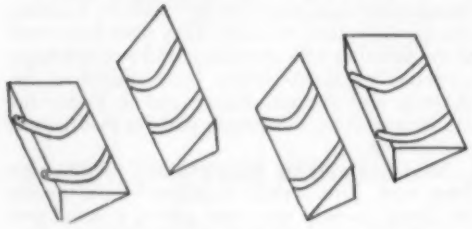

Figure 2. For medial elevation and for lateral elevation.

of varying thickness have been used for trial and error, but blocks 2 inches thick have been most helpful to a greater number of patients. The length is the same as the length of each patient's shoes.

Because of the lack of plantar flexion of the feet during weight bearing, most patients have an increased flexion of the hip and knee. On stretching the hamstring group of muscles we have not been able to strengthen the quadriceps to the same degree. Therefore, the blocks have been used to obtain a greater plantar flexion; at the same time we obtain less flexion at both hip and knee, and in this way we are able to strengthen the quadriceps through better alinement of the body. The ambulatory patient is able to gain a better posture during standing and walking, and is able to strengthen the quadriceps muscle. The nonambulatory patient gains balance and equilibrium faster by the redistribution of weight and is aided in progress toward ambulation.

In the patient with too great plantar flexion of the feet, blocks are placed in the position that throws the body in the best possible alinement.

Materials and construction (See fig. 1 and 2). A piece of plank 2 by 4 inches is cut the length of the patient's shoe. It is then sawed lengthwise to form two wedges of equal length 2 inches thick at one end and paper-thin at the other end. Inner tubing rubber is glued or tacked to cover the bottom of each wedge. Straps of inner tubing rubber, tacked or glued to top of the wedge at front and back, are used as ties to hold the wedge in place.

The First Thanksgiving

The water was too shallow to land the boat. But the harbor was well sheltered, and it looked like the kind of landing place they were seeking.

"Bring her alongside that rock!" said Captain Miles Standish.

The tiny boat, its mast split in three places, turned its side to the grey December sea and drifted up against the great boulder. The intrepid Standish stepped over the gunwhale and planted his foot on the New England granite.

The boulder was—Plymouth Rock.

For the Pilgrims, it was "the end of the beginning." Behind lay persecution, exile—and the momentous decision to seek religious freedom in the uncharted New World. Ahead lay hardship, death—and immortality.

It was four days before Christmas when Standish and his small group of men went ashore at Plymouth. They returned to the Mayflower, anchored off Provincetown, with the good news that a site for the new settlement had been found.

On December 26 the Mayflower, braving high wintry winds, made a successful passage into Plymouth Harbor.

The Mayflower had set out for America on Sept. 16, 1620, with 102 passengers. On November 19, land was sighted. A few days later the Pilgrims met in the cabin of the ship and drew up the famous "Mayflower Compact," establishing themselves as a civic body under a government of law. It is one of the great documents in mankind's search for freedom.

The Pilgrims' first winter is a tragic—and precious—page in American history. In *The Story of the Pilgrims*, published in the John Hancock Mutual Life Insurance Company's popular historical booklet series, the group's sufferings are described. "Before the winter was over, half the entire band had perished of disease, hunger, and exposure."

The dead were buried on nearby Cole's Hill, and grain was sown over the burial plot to conceal from the Indians how many of the band had died. It was feared that this knowledge might embolden the Indians to make an attack.

Photo courtesy of John Hancock Mutual Life Insurance Co.

The First Thanksgiving Feast

Early in March the bitterly cold winter finally began to recede. On March 26 another hopeful event took place when Samoset, grand sachem of the Mohegan Indians, entered the village exclaiming "Welcome!" Through him the Puritans became acquainted with Squanto, and these two Indians played an important role in the history of the Colony.

They told the Pilgrims to plant Indian corn "when the oak-leaves are as big as mouse-ears," and to catch fish to fertilize the soil. Thus the seeds were sown for the first Thanksgiving harvest.

Twenty-one men and "six large boys"—the entire surviving able bodied male working force of the colony—did the planting. They had no horses or other domestic animals. With heavy hoes they broke the earth, and planted 20 acres of corn. They they sowed 6 more acres with wheat, rye, barley, and peas.

It was a warm and bright summer, and the crops grew and thrived.

When autumn arrived, the three log warehouses were filled with provisions. By this time Plymouth Colony also boasted seven dwellings and a combined church and town meeting hall.

Not only did the Pilgrims enjoy a bountiful harvest, but the waters abounded with fish and the woods were filled with deer and wild turkey.

Governor William Bradford and the Plymouth Council deliberated gravely. It was fitting, they thought, to celebrate and give thanks for their good fortune.

The Pilgrims issued a formal invitation to Massasoit, grand sachem of the Pokanoket Indians, to join them in a feast of Thanksgiving. Massassoit arrived with 90 of his followers and stayed for three days! There was a great round of entertainment and feasting.

As with all Thanksgiving Days since that first celebration at Plymouth, it was an occasion that combined gaiety with solemnity. The devout Pilgrims added prayers of thanks to their feasting.

The days of suffering, however, were not yet over. Famine was to come to Plymouth again in succeeding winters. But for the Pilgrims, once they had set foot on Plymouth Rock there was no thought of turning back. They came to build a society of free men in the inhospitable wilderness and this they were determined to do.

In later years, Governor Bradford wrote in his famous *History of Plymouth Plantation:* "Out of small beginnings greater things have been produced. As one small candle may light a thousand, so the light here kindled hath shone onto many."

He, of course, could not know that the light he helped to kindle would one day shine throughout the earth.

Editorial

1 : 6 : : 1 : 3

"One who anticipates following physical therapy as a vocation does need a vision which can transcend the materialistic side of it," wrote Ida May Hazenhyer following a salary survey conducted by this Association in 1938. Salaries from $600.00 without maintenance to $3,600.00 with maintenance had been reported with a median salary of $1,650.00. Of the 916 members aproximately 50 per cent were employed in hospitals and the opportunity for maintenance was an attraction.

By 1941, the membership had grown to nearly 1,300 and a salary survey indicated that physical therapists were earning from $900.00 to $4,000.00 with a median salary of $1,800.00. A work week of 44 to 48 hours was acceptable and annual vacations of two weeks were very welcome.

The war years brought many changes with the greater need for physical therapists in the military and governmental services, increasing activity of the National Foundation for Infantile Paralysis in the care of poliomyelitis patients, development of more educational programs for the preparation of physical therapists, as well as establishment of the National Office of the American Physical Therapy Association.

In 1944, with Association membership at 2,094, a study of personnel policies revealed that most physical therapists were working a 40 to 44 hour week. Salaries ranged from $1,000.00 to $6,000.00 with a median salary of approximately $2,000.00.

As a means of maintaining standards of physical therapy service for patients and to protect the general welfare of the qualified physical therapist, it was timely for the Association in 1946 to recommend desirable personnel policies including equitable salaries commensurate with experience and responsibilities, a 40 hour work week with adequate vacation time, sick leave and retirement benefits.

During the next decade advice and consultation from the National Office staff was made available to employers and administrators of physical therapy services who were establishing new departments or expanding existing services. Salary ranges were revised periodically as studies conducted by our local chapters revealed the rising cost of living, greater use of physical therapy, and the inequalities of supply

and demand for personnel in the health fields. It became evident that a comprehensive study of personnel policies affecting all Association members was needed.

The 1956 study of personnel policies conducted on a nation wide basis provided a broad look at ourselves—a professional organization with 4,837 active members. Professional income of physical therapists varied widely on a regional basis from a low of $3,000.00 for part time employment to a high of over $10,000.00 with a median salary of $4,400.00.

A follow up sampling carried on recently and reported in this issue of the *Review* indicates that salaries are continuing to rise. Basic earnings were reported in all ranges up to over $10,000.00 with a median salary of $5,750.00. Active membership in the Association at the time of the sampling was over 6,000.

Some physical therapists have kept the "vision" of the importance of their contribution in the patient's rehabilitation program. They have had the pleasure and satisfaction of working with others in understanding the patient and helping him become a contributing member of society. They have shared that vision with others and as a group have worked toward improving abilities in doing an even better job.

The Association has grown from an active membership of less than 1,000 in 1938 to over 6,000 practicing physical therapists in 1959. In 21 years the median salary for physical therapists has increased threefold.

The overview of the "materialistic side" of the growth and development of the profession implies that physical therapists are proving their worth through performance. May we continue to hold "a vision which transcends the materialistic side."

LUCY BLAIR
Acting Executive Director

New Law Extends Retirement Benefits to Certain Army Nurse and Army Medical Specialist Corps Officers

Public Law 86-197, recently signed by the President, will benefit certain Army Nurse Corps (ANC) and Army Medical Specialist Corps (AMSC) officers not previously eligible for Reserve Retired Pay.

Types of service that will now be credited in the computation of retired pay are:

1. Service in the U. S. Army in temporary wartime appointments prior to July 10, 1944 and after June 30, 1948.

2. Regular or Reserve service in the Army or Navy Nurse Corps as it existed at any time after Feb. 2, 1901 when the Corps were first organized.

3. Active full time duty, except as a student or apprentice, performed with the "Army Medical Department" as a civilian dietitian or physical therapist between April 6, 1917 and April 1, 1943.

4. Active full time duty, except as a student or apprentice, with the "Army Medical Department" as a civilian occupational therapist before appointment in the AMSC or ANC and before Jan. 1, 1949.

Upon relief from Active duty or from Active Reserve status, many ANC and AMSC Reserve officers requested transfer to the Retired Reserve because they could not acquire an eligibility for retired pay prior to reaching age 60.

With the change in law, crediting certain service, these Reserve officers in the Retired Reserve may request transfer to an active *Ready Reserve* status, provided they can acquire an eligibility for Reserve Retired Pay prior to age 60. DA Airmail Message 18711, dated Sept. 14, 1959, provides the authority for this transfer.
be considered as commissioned service.

PL 86-197 further benefits Regular and Reserve Army officers who were nurses, dietitians, physical or occupational therapists in the Armed Forces before these groups had a commissioned officer status, by providing that all service may

Association News

Marriages

Margarita Avillant, of Rio Piedras, P.R., now Mrs. Margarita A. de Castillo, Rio Piedras.

Mary Baker, of Minneapolis, Minn., now Mrs. Mary B. Replogle, Minneapolis.

Pamela Barron, of Kansas City, Kans., now Mrs. Pamela B. Darnell, Portland, Ore.

E. Janeane Beck, of San Diego, Calif., now Mrs. Janeane B. Landells, Lemon Grove, Calif.

Cary Briscoe, of New York, N.Y., now Mrs. Cary B. Canfield, Mt. Vernon, N.Y.

Louise Cecchini, of Sheboygan, Wis., to Jacob V. Lulack, Jr., Madison, Wis.

Eleanor Del Bonis, of Cranston, R. I., to James W. Parker, Jr., Cranston.

Katherine E. Doyle, of So. Pasadena, Calif., to R. Bruce Brown, San Diego, Calif.

Iris Estavillo, of Rio Piedras, P.R., now Mrs. Iris E. Lamberty, Rio Piedras.

Madeline Faller, of Menlo Park, Calif., now Mrs. Madeline F. Johnson, San Francisco, Calif.

Mona Gaines, of Blytheville, Ark., to Ferry Phillips, Blytheville.

Frances Gustafson, of San Diego, Calif., now Mrs. Frances G. Clark, San Diego.

Fern Horine, of Glendale, Ariz., now Mrs. Fern H. Dabill, Glendale.

Nancy E. Maher, of Deep River, Conn., to Robert A. Cairns, Guilford, Conn.

Dorothy Morrell, of Madison, Wis., now Mrs. Dorothy M. Plater, Madison.

Carol A. Osborn, of Chelmsford, Mass., now Mrs. Carol O. York, Chelmsford.

Jean Plasterer, of New York, N. Y., now Mrs. Jean P. Pletcher, New York.

Martha J. Roberts, of San Francisco, Calif., to Franklyn C. Hill, Jr., Oakland, Calif.

May Schmersal, of Washington, D. C., now Mrs. May S. Wentz, Washington.

Virginia Skinner, of Aberdeen, S. D., now Mrs. Virginia S. Reed, Aberdeen.

JoAnne E. Stenger, of St. Louis, Mo., to James F. Futrell, Belleville, Ill.

Phyllis Stubbe, of San Diego, Calif., to Edward Thompson, San Diego.

Julia Svoboda, of Long Beach, Calif., now Mrs. Julia S. Schott, Long Beach.

Arlene L. Torkeo, of Arnold, Pa., now Mrs. Arlene T. Gimigliano, Pittsburgh, Pa.

Frances A. Trivison, of Cleveland Heights, Ohio, to Julius J. Chepey, Jr., Youngstown, Ohio.

Shirley Vandegrift, of Glenside, Pa., now Mrs. Shirley V. Offermann, Glenside.

Starlita West, of Davis, Calif., now Mrs. Starlita W. Weubbe, Elk Grove, Calif.

Elizabeth Findlay Provost

Elizabeth Findlay Provost, her husband Roger, and her son David, were reported missing following the earthquake at Yellowstone National Park. Many will recall this devastating event—it was headlined in every newspaper across the country that August day in 1959—but few will be cognizant of the death of Elizabeth.

"Liz," as she was known by her friends, came from Ontario, California. In 1954, she won the coveted Elks' Club Scholarship and attained her degree in physical therapy at Stanford University in 1955.

Liz's first and only job as a physical therapist was at the Monterey County Hospital in Salinas, California. Here she worked diligently in her soft spoken and unassuming manner. Through her devotion to the chronically ill and bedridden patients, Liz became well known and sought by all.

Although life was not bountiful in material ways, she will be long remembered in the minds of those she served.

JOAN MITCHELL BARD

Mrs. Elizabeth Findlay Provost of Soledad, California had been a member of the Association since 1955 and was an inactive member of the Northern California Chapter.

Chapter News

Arkansas

Chapter members participated in an all day series of lectures and workshops on September 19. Mrs. Ann Craig of the Department of Physical Medicine at Baylor University Hospital in Dallas was the guest lecturer. Physical therapy students from Baylor also attended.

Iowa

The monthly newsletter from the Chapter President welcomes 8 new active members and points out that there are at least 20 more eligible physical therapists to be "recruited." The letter closes with "*The Return*—Show It."

Louisiana

The Medical Progress Committee of Louisiana selected *The Return* for a showing of medical films during the Louisiana State Fair in October. Northern and Southern Districts cooperated in presenting the Chapter's first State Fair exhibit.

New York

A special summer edition includes Chapter election results, annual reports of standing committees, and résumés of the Educational Institute held on May 22. The newsletter carries detailed reports on physical therapy legislation in New York State.

Oregon

The August issue of the *Oregon Log* presents the list of Chapter officers and committee chairmen, news on legislation, reports from Northern and Southern Districts, and items of interest about Oregon members.

Vermont

Highlights of the July business meeting were:

1) Preparation for publication of a Chapter Directory.
2) Plans for publication of a physical therapy fact sheet to be sent to all hospital administrators in the state. The information is to include application forms for State Registration.
3) Plans for an exhibit at the meeting of the Vermont-New Hampshire Medical Societies.

Members' Publications

Signe Brunnstrom is co-author with Glenn G. Reynolds of an article entitled "Problems of Sensorimotor Learning in the Evaluation and Treatment of the Adult Hemiplegic Patient" published in *Rehabilitation Literature*, June, 1959. Reprints are available at $.25 per copy from the National Society for Crippled Children and Adults, 2028 West Ogden Avenue, Chicago 12, Illinois.

Dorothy E. Voss is author of "Proprioceptive Neuromuscular Facilitation—Application of Patterns and Techniques in Occupational Therapy" published in the July-August 1959 issue of the *American Journal of Occupational Therapy*.

From the Illinois Chapter Newsletter

Illini News, October, 1959, contained a report of the 36th Annual Conference in Minneapolis.

A sizable Illinois delegation collected at the *National Conference* in Minneapolis. After a week of hard listening and fast writing we emerged from the smoke filled rooms with somewhat bleary eyes; but with a fine collection of notes and ideas on the central theme of the meetings: Pain. To many of us one of the most rewarding and impressive sessions was that at which we heard presentations by our own membership on Physical Measures for Relief of Pain. Rachel Adams, Alma Murphy, Alfred Szumski, Miriam Jacobs, and Helen Hislop all presented comprehensive discussions of treatment technics applied to the solution of this central problem. It must be a source of real pride to all the therapists who attended the meetings to find first that such excellent physicians and administrators from outside our profession are happy to take time to contribute to our learning; and then to see evidence of such mature work being carried out within our own ranks.

The business meetings which do seem a little cut and dried when compressed into an official report were very lively indeed. Most heated discussion centered around the proposed increase in National dues. You had instructed your delegates to vote for the increase and after full discussion of the matter, the House of Delegates voted strongly in favor of its passage. A number of suggestions regarding practical frugality were made. Perhaps the most pertinent to us as individual members was the itemization of the enormous increases in expenses produced by late payment of dues. You will certainly hear more about this as we try to supplement the small dues increase with larger savings in operational expenses.

Letters to the Editor

Annual Dues—Reactions of Members

The following letter from Joseph Rossi, an active member since 1951, was received in response to the letter from Male Member, No. 1, as published in the September 1959 issue of the *Review*. Male Member, No. 1, should have been identified as a 1958 graduate rather than as a 1959 graduate.

538 Via De La Paz
Pacific Palisades, California

September 18, 1959

DEAR EDITOR:

In the past few years I have read several letters in the *Physical Therapy Review* and in the Newsletter that pertained to the payment of national dues and physical therapists' salaries. I would like to express my feelings about such matters.

I am married (to a former physical therapist) and have four children. I have been a therapist for 8 years. In all this time I have never hesitated to pay my national dues; $20.00 per year is a very small amount to pay for someone else to run my professional organization. Even the local labor union requires members to pay $90.00 to join and $48.00 per year for dues. I also keep in mind that $3.00 of the $20.00 goes towards running my local chaper. If the dues were $50.00 per year I would still feel it was worth paying.

The first job I had as a therapist paid $258.00 for a 44 hour week. I'm sure there are many therapists who started with even less than this. I have come a long way from this initial salary. I took advantage of this land of opportunity and travelled across the country in order to better myself. This required temporary hardship on my wife and myself, but now we feel it was worth it.

I have always tried to impress my patients, doctors, and my employer with the values of physical therapy. This was done by administering physical therapy to the best of my ability to every patient I take care of; to impress on them the training requirements of the physical therapist; and try to maintain the highest professional ethics. I feel that I am succeeding in that the physical therapy department here where I work has grown from one therapist and one aide to four therapists and two aides. My salary has also made a steady increase. I have also been able to treat home patients to supplement my salary. One night of treating outside patients has been sufficient to pay for my national and state dues for *an entire year*.

In summary I believe this: that we as individual therapists can help ourselves to increase salaries by helping the public, doctors and employers to know us better by doing good physical therapy, maintaining high professional ethics, and through good state and national organizations — the latter by supporting them financially, physically, and morally. This land is still full of opportunities for those who are willing to work hard and seek them out.

Sincerely,
JOSEPH ROSSI

223 W. Harvard Avenue
Roseburg, Oregon
September 24, 1959

DEAR EDITOR:

This letter is in response to one from a physical therapist member, printed in the September 1959 edition. Male Member, No. 1, motivates me. He motivates me to write this letter, and I hate to write letters.

He asks questions about the family finances. No one can answer these questions for him. These are things he and his wife will have to answer for themselves.

He further states he earns $365.00 per month and spends the greater portion of his money on rent, $70.00, and food—what does he eat?

My first job in '54 paid $285.00 per month. We had a Federal Budget. "It didn't balance." I now earn over $600.00 per month. We still have a Federal Budget. "It still doesn't balance."

I have found in my experience as a physical therapist that no one is going to give me money. I have to work for it. If Male Member, No. 1, is willing to work—the jobs that pay are here—and don't think for a minute the A.P.T.A. doesn't concern itself with job standards and wages. Who do you think it was that brought your starting salary up to $365.00?

As to your four questions: (1) Only you can find the "where" for $20.00; it is there, just look. (2) As for the clothes, I find my Sunday clothes appropriate for physical therapy meetings. I even saw several fellow physical therapists in sport shirts in the National Conference in Minneapolis. (3) Why not have an evening job? Every place I ever heard of they are looking for physical therapists to do evening home calls. They will pay better and you will have more time off for meetings. (4) As for the "dime for the eraser"—You do have problems!

JACK GAMET
(Active member since 1953)

DEAR EDITOR:

After reading the Kendalls' comments in the September 1959 *Physical Therapy Review* on the article entitled "Variations in Current Manual Muscle Testing" the author feels that some clarification is necessary in order to clear up the possible misinterpretation of the presentation of the data.

The charts presented in the study were drawn up from the data received by questionnaire from 52 physical therapists. The questionnaire asked for a description of the test used for nine individual muscles and two muscle groups (internal rotators of shoulder and hip). The resulting tabulation showed as many as nine variations in testing methods for some of the muscles and in the interest of clarity and content it was decided to limit the discussion only to those tests used by five or more persons. As a matter of interest, muscle testing record forms were requested. Forty-six were received. The numbers from the record forms mentioned in the text were used simply to give an idea of what appears on a certain sampling of record sheets. Because of the qualitative nature of the study, no statistical correlation of the two sets of figures was intended or implied.

The Kendalls, however, assumed that the persons who tested the anterior deltoid by shoulder flexion used the record form listing shoulder flexion and, therefore, concluded that the author took certain liberties in including muscle group tests in a discussion of individual muscles.

The author did not make this assumption. A specific correlation between questionnaire results and record forms was not intended and the discrepancy in the figures indicates such assumption was not warranted. Therefore, it was necessary to use the data exactly as it was received on the questionnaire without attempting to relate it to the record form. Indeed, the author would have taken liberties with the data in this case if any interpretation had been attempted.

Sincerely,
MARGARET WINTZ

DEAR MISS VOSS:

Please change my address to:
Mary M. Alderman
5853 North Kenmore
Chicago, Illinois

as of October 1st.

I can't tell you how much I appreciate the *Review*. Each issue seems to hit exactly a current discussion within our department. Thank you for making it so interesting.

Sincerely,
MARY ALDERMAN

September 21, 1959

Mrs. Mary Alderman
5853 North Kenmore
Chicago, Illinois

DEAR MRS. ALDERMAN:

We do appreciate your kind comments about the *Review* and will publish this letter along with yours in the hope that all *Review* readers will understand that the *Review* is the end product of cooperative effort.

There are the authors — physical therapists, physicians and others—without whom the professional literature could not be developed.

There are the guest editorial writers whose timely discussions are of professional interest.

There are five Associate Editors who select the articles for publication and who give guidance to authors. The Editorial Board also keeps a watchful eye on the development of our journal.

There are the abstracters and book reviewers who conscientiously try to keep readers informed of current publications.

There are the Managing Editor, Carol Vance, her full time assistant, and one part time assistant without whom the *Review* could not "be put to bed."

There are the printers and proof readers without whom 9,000 copies could not be produced each month.

There are the advertisers without whom readers would not learn of new products and without whom the *Review* could not be supported financially since the printing bill alone is almost $3,000.00 monthly.

There are employers of physical therapists who through "Positions Available" offer opportunities to those seeking employment.

There are National Officers, the Board of Directors, and Chairmen of Committees who submit reports published in the *Review*.

There are consultants and division chiefs in the National Office who prepare statistical and narrative reports.

There are National Office staff members who contribute directly or indirectly to the *Review* and secretaries who type much of the copy for Association and Chapter News.

There are chapter and district newsletter editors and secretaries who keep us on their mailing list. From their publications Chapter News is prepared.

There are physical therapy instructors and students who submit items for the Education and Student Columns.

There are members and readers with inquiring minds who write "Letters to the Editor."

There are readers around the world without whom the *Review* would be a provincial journal.

There are practicing physical therapists, like you, who read and discuss the *Review's* pages, who benefit from the ideas presented or from the discussion of the ideas.

To all of these people, to all readers and contributors, the *Review* is indebted. To hear that the *Review* presents timely and thought-provoking material is gratifying and we thank you.

Sincerely yours,
DOROTHY E. VOSS
Editor in Chief

Summary of Meeting of House of Delegates

June 23, 24, 1959 — Minneapolis, Minnesota

The House of Delegates of the American Physical Therapy Association convened and conducted its business during two sessions at the 36th Annual conference. Delegates from 52 chapters, carrying a total of 289 votes, were duly registered. Chapters not represented by delegates were Alaska, Arkansas, Santa Barbara (California), Hawaii, Maine, and Rhode Island. These six chapters had 151 active and life members and their delegates would have carried 12 votes. Therefore, almost 98 per cent of the voting members of the Association were represented at the 1959 sessions.

Mary Elizabeth Kolb, First Vice President and Speaker of the House, presided. She was assisted in conducting the business by: Dorothy Hewitt, Second Vice President; Jean C. Bailey, Secretary; and Mrs. Edith Meinecke, Parliamentarian.

Preceding the opening of formal business, the speaker read the names of Association members deceased within the last year, while the House paid respect by standing for a minute of silence.

A committee composed of Louise A. Bailey, Lola Smith, and Jean C. Bailey was appointed by the speaker to edit the minutes.

Elizabeth Wood, Charles Durando, and Anna Janett were appointed as Tellers to officiate at elections with Elizabeth Wood designated as Chief Teller.

The Report of the Nominating Committee was presented and the candidates were introduced by Beth J. Phillips acting for the Chairman, Mary Clyde Singleton. Following the closing of nominations, the speaker instructed the delegates on rules of the election.

Jean C. Bailey, Secretary, reported on the Association business as transacted by the Board of Directors for the year June 1958-June 1959, and gave the composite report of data as submitted by the chapter and district secretaries.

The Treasurer's report, the Financial Committee Report, and the composite report of the chapter and district treasurer's reports were given by the Association's Treasurer, Anthony De Rosa.

Other reports presented were: The Conference Program Committee by Chairman, Hazelle Erickson; the Judicial Committee by Clara Arrington, Chairman; *Review* Editorial Board by Chairman, Lt. Col. Barbara R. Friz; The Physical Therapy Fund, Inc. by President of the Board of Directors of the Fund, E. Jane Carlin. All the above reports and those of the officers were placed on file and will be published in the September 1959 issue of the *Physical Therapy Review*.

The National Office Staff Consultants participated in a panel presentation highlighting various activities in the National Office. This was done because comprehensive reports of all activities of the different departments would appear in the *Review*. They were introduced by Acting Executive Director, Lucy Blair.

The first order of business at the second session, following Roll Call was the report of the Chief Teller, Elizabeth Wood. The result of the election is as follows:

Directors:

Three year term
Arthur Brown
Florence Linduff
Dorothy Frederickson

Nominating Committee:

Three year term
Dorothy Baethke
Ruby Decker

E. Jane Carlin gave a progress report on two meetings with representatives from the American Physical Therapy Association, the American Registry of Physical Therapists, and the American Congress of Physical Medicine and Rehabilitation. These meetings were requested following the adoption of a Resolution in June, 1958, by the House of Delegates. A third meeting is planned for early fall.

At the second session of the House of Delegates we were privileged to hear Dr. Catherine Worthingham, Director of Professional Education of The National Foundation. Dr. Worthing-

ham discussed the nationwide health scholarship program which has been undertaken this year as part of the new program of The National Foundation. A minimum of 505 scholarships will be open annually for a period of 10 years. One hundred and three will go to graduating high school students to provide four years of college education in physical therapy. She emphasized how important it is for the chapters of the American Physical Therapy Association to aid The National Foundation chapters in their efforts to recruit candidates for the scholarships in physical therapy. She also mentioned how necessary it is for us in the health professions to help interpret to the public the need for facilities and manpower to carry on education and research in the health professions.

An open discussion of proposed Bylaw changes was held Monday night prior to the opening of the House of Delegates. At this session the following amendments to the Bylaws were adopted:

Bylaw II—Functions

(b) To provide leadership in physical therapy education by: promoting sound principles of education; stimulating the development of programs and opportunities for growth; guiding and evaluating the organization and administration of curricula; and directing the maintenance of standards.

Bylaw III—Membership

Section 3—Qualifications and election of members other than active members.

(a) Life Members.

Upon application and approval of the Board of Directors, an active member, who has retired from gainful employment and has completed thirty years of active membership or has completed twenty years of active membership and has reached the age of 65 at the time of retirement from the field of physical therapy, shall be eligible for life membership.

Section 4—Rights of Members.

Active members and life members who are in good standing are entitled to all the rights, benefits and privileges of this Association, including the right to register at sessions of the society, to attend and participate in the general meeting held therein, to vote, to hold office, and to serve on committees subject to the qualifications set by these Bylaws for the particular offices or committees. Active members who are in good standing are entitled to receive a copy of the Association's official publication as issued. All other members who are in good standing possess all the rights of membership except the right to vote and to hold office or serve on standing committees or to imply by any means that they the active members.

Section 6—Dues and Special Assessmnts.

On or before May 1 of each year the dues noted below shall be forwarded to the Association. The records of the Association's central office with respect to the payment of dues shall be evidence of the correctness of the facts. Any member whose dues for that year have not been received by August 1 shall be suspended from membership until such time as current dues are received.

(a) Active Members—$25.00.
(b) Student Members—$2.00 and an additional $4.00 if they subscribe to the official publication of the Association.
(c) Life Members—no dues. A subscription to the official publication shall be $5.00.
(d) Honorary Members—No dues.
(e) Associate Members—$5.00.
(f) Inactive Members—$4.00 and an additional $5.00 if they subscribe to the official publication of the Association.

The dues of a member elected to membership after October 1 shall for the year of his election be one-half the annual dues. The dues of a student member transferring to active membership during the fiscal year of graduation shall be one-half the annual active membership dues.

The annual dues of an active member shall be allocated as follows: $4.00 to the appropriate component chapter; $5.00 to the Association's official publication; and $16.00 to the National Office of the Association. The dues of all other types of members shall be allocated as the Board of Directors may determine.

Bylaws VI—House of Delegates

Section 6—Election Procedures.

(a) A President, First Vice President, Second Vice President, Secretary, Treasurer, shall be elected triennially by majority vote to serve for three years or until their successors are elected.

Ten directors shall be elected in accordance with Bylaw V.

Five members of the Nominating Committee shall be elected in accordance with Bylaw XI.

(b) Election by ballot shall be carried out by delegates voting either in person or by proxy as provided in Bylaw VI.
(c) A list of nominees shall be published by the American Physical Therapy Association and distributed to the members at least two months prior to the Annual Conference.
(d) At the first meeting of the House of Delegates the First Vice President shall appoint and instruct tellers who shall act also as inspectors of election.
(e) Each delegate shall be identified as a delegate by the tellers and shall receive the number of ballots to which he is entitled.
(f) In the case where members vote for two or more candidates for an office, the number of candidates needed to fill the positions who receive the highest number of votes shall be declared elected. In the event of a tie, reballoting shall be held to determine election.

Section 7—Special Committees.

Section 8—Vacancies during Meetings.

Section 9—Report of Proceedings.

Section 10—Memorials and Resolutions.

Bylaw X—*Physical Therapy Review*

Section 1—Name

The *Physical Therapy Review* shall be the official journal of this Association.

Section 2—Editorial Board

There shall be an editorial board consisting of at

least three associate editors, one of whom shall be designated chairman of the board, who shall:

(a) Be members of the Association.
(b) Be appointed biennially by the Board of Directors.
(c) Be responsible for the development of the publication.
(d) Be responsible for reports to the Board of Directors and the House of Delegates upon request.

RESOLUTIONS

The following resolution relating to the World Confederation for Physical Therapy was presented and it was voted that it be referred to a committee consisting of the Board of Directors for further study with a report to be given at the next session of the House of Delegates in 1960.

WHEREAS, The American Physical Therapy Association has taken a responsible position in the founding and development of the World Confederation for Physical Therapy, and

WHEREAS, The solution of problems affecting world health depends on continuous thought and action by each nation participating in the solution of such problems, and

WHEREAS, No procedures have yet been defined within the framework of the American Physical Therapy Association defining a working relationship with the World Confederation for Physical Therapy; therefore, be it

Resolved, That the Board of Directors of the American Physical Therapy Association be asked to establish standing rules which:

1. Define the method of selection of, and the term of, the official voting delegate of the American Physical Therapy Association to the World Confederation for Physical Therapy;
2. Provide procedures for instructing the official delegate, as far as possible, through the House of Delegates of the American Physical Therapy Association,
3. Provide methods and means of furthering the aims and programs of the World Confederation for Physical Therapy within the confines of the American Physical Therapy Association, be it further

Resolved, That the Board of Directors be guided, as far as possible by the following recommendations:

1. That the President of the American Physical Therapy Association be the official voting delegate from the APTA to the World Confederation and serve as such while incumbent as President.
2. That the 1st Vice President of the APTA be the 1st Alternate delegate from the APTA to the WCPT and serve as such while incumbent as 1st Vice President.
3. That the APTA's Advisory Committee on the World Confederation consist of not less than 5 members including the President and 1st Vice President of the APTA, any member of the APTA holding an office, or serving on the Executive Committee of the WCPT, and two members to be chosen by the Board from the membership of the APTA; and that the terms of members serving on said Advisory Committee be staggered to afford continuity of study, thought, and action.

The following commendatory resolution was adopted:

WHEREAS, The National Foundation has through its grants to the American Physical Therapy Association permitted and promoted the development of the Association in its ability to serve the public, the membership, and the profession, and

WHEREAS, The National Foundation has, over a period of years, given both financial and moral support to our efforts as an Association; therefore, be it

Resolved, That the House of Delegates go on record as expressing heartfelt appreciation to The National Foundation for all that it has done and assure The National Foundation that in indicating its intent to gradually withdraw financial aid for the basic activities of the Association, it has in reality contributed again to the development of the Association.

Another resolution unanimously adopted reads as follows:

WHEREAS, The House of Delegates of the American Physical Therapy Association has approved a dues raise, and

WHEREAS, The Southern California Chapter realizes that this raise is unrealistic for meeting the future financial needs of the Association, and

WHEREAS, This chapter also realizes that future increments of dues may be deemed necessary, and

WHEREAS, The Board of Directors is planning a study of the operational and financial structure and needs of the Association; therefore be it

Resolved, That concentrated and repeated efforts on the part of the Board of Directors be made to keep the membership advised of the findings of this study and its future implications, and be it further

Resolved, That each chapter undertake an intensive program to the end that each member is fully aware of his professional responsibilities to the Association.

It was voted that the Board of Directors of the American Physical Therapy Association be requested to include in the National Office Annual Statistical Report, an itemized breakdown of income and expense of the Association.

As a fitting close to the House of Delegates meeting, Sarah Coleman a member of the Iowa Chapter and a Charter Member of the Minnesota Chapter, installed the newly elected Directors and Nominating Committee members.

It will be pleasing to chapter members to know that Mrs. Meinecke, the Parliamentarian, complimented the chapters for sending delegates with good humor, manners and courtesy, and fine minds. She also complimented the Speaker, and praised the reports as presented by the officers, committee chairmen, and the staff of the National Office.

The meeting adjourned at 12:15 P.M.

JEAN C. BAILEY, *Secretary*
LOUISE A. BAILEY
LOLA SMITH

The Review Went to Paris!

Eighty-nine Third Congress bound passengers on the second chartered flight carried with them 88 copies of the September issue of the *Review*. Many physical therapists and physicians from non-World Confederation countries received their first introduction to our professional journal and we heard several interesting comments, such as "Glamour! glamour!" and "We think the American journal is the best!"

The translations of useful expressions in French, Italian, and Spanish were especially well received and a series in other languages has been planned. With 35 countries represented at the Congress, the *Review's* foreign country subscriptions should in another year far surpass the 63 countries to which the *Review* was sent last year.

The December issue will include impressions of the Third Congress.

Annual Meeting of the Self Employed Section

When the Self Employed Section met in Minneapolis June 21, 1959, the program committee presented an excellent program which included discussions on the subjects of the self employed physical therapist in the hospital and a demonstration of physical therapy in athletic injuries. After lunch there was a panel discussion on fee schedules.

A brief business meeting was held in mid-afternoon with election of officers.

Vice President	Royce Noland, California
Treasurer	Gilbert Gimble, California
Corresponding Secretary	Joe Savan, Missouri
Recording Secretary	Jeanne Geren, Illinois

Alma Maga continues as Chairman of the Section.

The Rules Revision Committee appointed last year presented its report and the proposed Rules of Government were adopted unanimously. Other subjects discussed included the possible development of criteria for establishing and financing an ethical practice, use of the *Physical Therapy Review* for publication of items of interest to members, and the feasibility of attempting to determine the number of self employed physical therapists who are not members of the Section.

A history of the Section was distributed to the members who were present.

Report of Public Health Section's Annual Meeting

During the annual meeting in Minneapolis, June 21, 1959, members of the Public Health Section enjoyed discussions pertaining to orientation of physical therapists to public health and keeping up-to-date on current trends. Mary MacDonald gave a report of a pilot study on physical therapy services in nursing homes. Discussions were lively and participants felt they learned much.

In the latter part of the afternoon a short business meeting was held. Twenty-six members were present and the following officers were elected:

Chairman . . . Helen Vaughn, Washington, D.C.
Treasurer . . . Lois Mitchell, Madison, Wis.

Nominating Committee . . .
Marjorie Foster, Boston, Mass.
Marion McLenahan, Rochester, N.Y.
Jean Reid, Los Angeles, Calif.

Anna Sweeley is Secretary and Marian Pratt continues as Vice Chairman.

Suggestions for future programs were requested and received, and a rising vote of thanks was extended to Clara Arrington for her support and guidance of the Section.

Education

THE SOUTHERN SCHOOL DIRECTORS

(From left to right) Sue Hirt, Technical Director, School of Physical Therapy, Medical College of Virginia, Richmond; Barbara C. White, Curriculum Chairman, Physical Therapy, The J. Hillis Miller Health Center, College of Health Related Services, University of Florida, Gainesville; Helen Kaiser, Physical Therapy Director, Duke University Medical Center, Durham, N. C.; Margaret L. Moore, Director, Curriculum in Physical Therapy, School of Medicine, University of North Carolina, Chapel Hill.

Physical Therapy Seminar at UNC School of Medicine

In March, the University of North Carolina, School of Medicine, Section of Physical Therapy, sponsored a seminar concerned with "Physical Therapy Education and Current Programs Contributing to North Carolina's Health." Approximately 50 physical therapists from North Carolina and invited guests from other states attended the two day program.

The objectives as listed were: (1) to present to the education committee and area recruitment chairmen, the physical therapy educational programs in North Carolina, in order that they might be better able to assist in recruitment and guidance of prospective students; (2) to present to supervisors of physical therapy departments concerned with student clinical affiliation programs, our physical therapy curriculum and a discussion of education through clinical affiliations; (3) to present to the group information about the contributions of current health programs to North Carolina's health.

During the first session Margaret Moore, Mildred Wood, Rachel Nunley, and Mabel Parker, members of the Faculty of the Section of Physical Therapy, University of North Carolina, discussed the "Present Status and Future Plans for the UNC Program in Physical Therapy." Helen Kaiser, Physical Therapy Director, Duke University Medical Center, outlined Duke's program with particular reference to the graduate credit feature offered to selected candidates. Evelyn McNeill, co-chairman of the Education Committee of North Carolina Physical Therapy Association, explained the organization of area recruitment chairmen in the state and suggested methods and procedures to be followed in recruitment.

The luncheon program was particularly stimulating with Susanne Hirt, Technical Director, School of Physical Therapy, Medical College of Virginia, challenging the group with her comments on—"Physical Therapy Education—A Responsibility of the Profession."

The afternoon program was a panel discussion, "Education Through Clinical Affiliations," with Barbara C. White, Curriculum Chairman, Physical Therapy, University of Florida, as moderator.

The schools' objectives and responsibilities were discussed by Sue Hirt and Helen Kaiser. The students' objectives and responsibilities were

presented by Elise Rutledge, a recent student, now graduate physical therapist on the staff at N. C. Memorial Hospital, Chapel Hill. To present the objectives and responsibilities of the supervisors experienced with students in the clinical affiliation situation were E. Sue Flowers, N. C. Memorial Hospital, Chapel Hill; and Virginia Whitfield, Home for Crippled Children, Pittsburg. Problems and organization of physical therapy departments in preparation for students in clinical affiliations for the first time were expressed by Kathryn E. Phillips and Ann Martin from Warm Springs Foundation; Jacqueline Maiden, Medical College Hospital of South Carolina; and Rae Litaker, Greenville General Hospital, Greenville, South Carolina.

The remainder of the afternoon time was all too short for the many comments and questions voiced by members of the audience.

The panel discussion and comments have been compiled for the benefit of members who participated.

Saturday morning the general topic of discussion centered around "Current Programs Contributing to North Carolina's Health."

Dr. William P. Richardson, Professor of Preventive Medicine and Medical Director, Curriculum in Physical Therapy, outlined the objectives and program of the North Carolina Health Council.

The State's major health problems were discussed by Dr. C. M. Cameron, Jr., associate professor of Public Health Administration and member of the advisory committee to physical therapy curriculum.

The research aspects and the newer concepts of service being considered by the N. C. Heart Association were explained by Dr. Carl W. Gottschalk, Assistant Professor of Medicine and Vice President of the State Heart Association.

Jack McGee, State Representative of The National Foundation, described the recent change in its program and its implication to our field.

Program coordinator for the N. C. Society for Crippled Children and Adults, Bernard Passer, expressed his ideas and hopes as to future contributions this organization may make to our State.

It was the sentiment of the group that it had been "brought up to date" with what was being done in the State by these allied health programs. It is sincerely hoped that another conference which has been tentatively planned to follow along this line will be possible during the fall quarter.

The National Foundation Scholarships

The first group of The National Foundation Health Scholarships has been announced. Eighty-three students entering colleges and universities this fall with a major in physical therapy are the fortunate recipients. The scholarship winners came from 37 states and Puerto Rico and it is anticipated that they will be among the 1963 graduates of 30 of the approved schools of physical therapy.

Each scholarship student will receive $500.00 each year during the four year period required for physical therapy preparation on a baccalaureate level. Scholarship Committees to select the candidates have been established in each state with representatives from the field of medicine, nursing, physical therapy, occupational therapy, and medical social work. The growth of this new program of The National Foundation should be effective in encouraging young people to select a career in one of the important health professions.

Summer Meeting — Graduate Study Committee

The Graduate Study Committee (Mildred Wood, Chairman; Fred Szumski, and Lois Wellock) met on July 24 and 25 at the Park-Sheraton Hotel in New York City.

Applications for traineeship awards were reviewed. The following awards were approved:

James Gray - $2,400 - Stanford University - Physical Therapy
Mary C. Singleton - $900 - Duke University - Anatomy
Dorothy Pinkston - $2,400 - Emory University - Education
Thelma Petty - $2,400 - Wayne State University - Education, Administration and Supervision
Jo Ann Tomberlin - $2,400 - Stanford University - Physical Therapy

The policies of the traineeship program were reviewed. Plans for promotion of the program were discussed. Plans for follow-up on trainees were discussed and a program was outlined.

Members of the Association are reminded that the deadline date for receipt of credentials for applications from members beginning graduate study in January-February, 1960, is Nov. 1, 1959; deadline date for receipt of credentials and applications from members beginning graduate study in June, 1960, is March 1, 1960. For further information or an application form contact, Department of Professional Education, the National Office.

*Physical Therapy Education — A Responsibility of the Profession**

Susanne Hirt, M.Ed.

It sometimes happens that a much used statement carries a message which, though apparently self explanatory and self evident, does not readily reveal its true meaning. The essence of an educative process is learning. Professional education embraces two large areas of learning—learning for the profession and learning within the profession. Every member of a profession is by nature of his professional status engaged in one of the two processes of learning. Even though we may continuously learn something by the mere fact that we are living, a specific type of learning is a response phenomenon—and a response is the result of a stimulus. Unless specific learning is stimulated, little of it will occur. To stimulate or to promote learning is a cardinal function of a member of a profession.

Responsibility, to many people, implies the existence of an authoritative figure to whom one is responsible. To whom is the professional person responsible for promoting the process of learning? If we consider this an inherent function of the professional person, we might conclude that the responsibility is to oneself and in a broader sense to one's profession.

Thus we may extract a more tangible meaning from the sentence, "Physical Therapy Education —A Responsibility of the Profession," by restating: "Promotion of Learning as a Self-elected Function Is the Trademark of a Profession."

Continuous promotion of learning by all members of the profession is probably one of the distinguishing features between a profession and other activities which do not qualify for this term. Closely tied in with this feature is the necessity for a profession to possess a pool of knowledge; this pool of knowledge we inherit from those who came before us. However, once we have acquired inherited knowledge and inherited skills they can become stagnant and out of date unless we of the present generation replenish them, add to them and throw out what has ceased to be of value, so that we can provide a fresh and up-to-date pool of knowledge to those who come after us.

There seem to be a good many clinical workers in our profession who are fearful at the thought of putting themselves into the role of a clinical teacher. This is a phenomenon which, even if it is not found exclusively in our profession, yet perhaps is more prominent in ours than in most other professions. There are basic reasons for this, I believe. One may be that we are still in the process of struggle towards achieving characteristics of a true profession; and secondly, that our academic teaching programs have only very recently developed to a relatively high academic standing and are still in the process of further development. As a consequence, many of our experienced clinical workers are fearful at the thought of having to measure up to the recently acquired factual information of the young student. A young student is not only inquisitive, but he also tends to enjoy showing off his recent acquisitions. However, he does not yet know the difference between textbook wisdom and wisdom through experience. He does not know yet what is important in a broad medical sense and what is not.

The clinical worker, on the other hand, who may have a background of rich clinical experience may not have had or taken the opportunity to evaluate his experiences and to draw conclusions from them sufficiently well formulated to be readily available to him for discussion purposes. True learning from experience, that is, learning that can be made available to others, can be recognized as such only if the experiences are related to others, shared with others, and then checked for validity.

It most certainly is not just a peculiar habit of physicians to discuss medical experiences wherever and whenever they run into a colleague who has at least a minute to spare to listen. We may think that sometimes they commit breaches of ethical conduct discussing their patients on

Technical Director, School of Physical Therapy, Medical College of Virginia, Richmond, Virginia.

* Presented as part of a seminar on "Physical Therapy Education," University of North Carolina, Chapel Hill, North Carolina, March 20, 1959.

the elevator, but what you see in process here is the very essence of good medicine, which hinges on the constant and urgent need for checking experiences for validity by relating them to others, or by learning from each other, and the time the elevator is running between floors may be the only time the busy physician has available to satisfy this urgent need. I am not advocating that we adopt this habit—we may not be quite that busy.

In our own physical therapy clinician we sometimes see an almost paradoxical change in feelings toward the inexperienced as soon as he ceases to be a student and has his name put on the payroll. The inexperienced, but fresh out of school, filled with academic wisdom, now ceases to be a threat or a fear producing challenge. The graduate is removed officially from the educational institution and has entered officially a noneducational working environment where a new hierarchy is well established. He is the "recent graduate" who has much to learn and much to forget—and we must admit that he will forget much very quickly and easily. But on the other hand he enters into an environment where the possibilities for real learning are just being opened for him.

How can he learn—and how do we know he is learning? We often say he learns by doing—preferably with the supervisor at a safe distance. We say he thus gains experience which in turn creates "self confidence." When we ask him what he has learned during the first three months on the job he may give us the answer we are looking for: "I have gained self confidence," and when we get this answer we may feel a job was well done. Have you ever heard a physician report that the main gain during his internship was confidence in himself? Most likely the physician will state that he is just beginning to know how much there is to learn. How did he find this out? He found himself in an environment where he was constantly confronted with the effects of learning from experience, being challenged by his elders and sharing their experiences. This type of learning is commonly referred to as "learning by apprenticeship." Learning by apprenticeship is reciprocal learning. The setting is simple and universal. Whenever we find ourselves in a professional environment, we find there are brought together those with less experience with those of more experience, and here is where the professional worker can execute his self-elected function of promotion of learning. Those who have much experience learn by sharing, by validating their experiences; that is, learning to recognize the valid from the invalid ones.

All people who have the ability to learn have an inherent ability to teach, because the essence of true learning is teaching oneself. When we sit down together and relate our experiences, or when we show each other skills we have acquired, we are teaching each other. Sharing experiences means sharing success as well as failures, since we cannot identify one without the other. Recognizing and verbalizing limitations in knowledge and skill will stimulate learning and disperse fear of shortcomings. It will create an atmosphere of security and genuine self confidence both in the young and the experienced. It may further lay the foundation for mutual respect and group spirit. Not everyone who is a member of a profession is inclined to write papers or books, but every one who is a member of a profession can find outlets for sharing his ever growing experiences, his failures and successes, and thus promote learning and become a contributor to the educational process within his profession.

United Cerebral Palsy Awards Grant for Scholarship Program

The Association's request to United Cerebral Palsy for a continuation grant to support the scholarship program for final year physical therapy students was favorably approved. A grant of $10,000 ($9,000 for scholarships and $1,000 to the APTA to cover indirect costs concerned with the program) was awarded.

The scholarship funds have been divided equitably among the 31 physical therapy schools participating in the program. The amount of money available to participating schools represents 53 per cent of the stated tuition for final year students at each school. Amounts available to the individual schools range from $60.00 to $740.00. Current tuition costs range from $110.00 in a state university to $1,400.00 in a large private university. Each participating school has its own scholarship committee which screens and selects applicants. Recommended applicants must be approved by the APTA Scholarship Committee. Checks for awards are then sent directly by United Cerebral Palsy.

The Association is grateful to United Cerebral Palsy for the continued support in this program aimed to add more personnel to the field to assure more adequate patient care.

SHORT TERM COURSES FOR GRADUATE PHYSICAL THERAPISTS

Title of Course	*Sponsor of Course*	*For Details Contact*	*Dates of Course*
Cerebral Palsy	The North Carolina Cerebral Palsy Hospital Durham, North Carolina	Dr. Lenox D. Baker Medical Director No. Carolina C. P. Hosp. Durham, North Carolina	Courses arranged according to individual need—duration 3 months
Physical Therapy in the Care of Neuromuscular Disease	Georgia Warm Springs Foundation Warm Springs, Georgia	Robert L. Bennett, M.D. Medical Director Ga. Warm Springs Found. Warm Springs, Georgia	January April October
Technics of Neuromuscular Reeducation	California Rehabilitation Center Vallejo, California	Margaret Knott, Chief P. T. Calif. Rehab. Center Vallejo, Calif.	January 1 April 1 July 1 October 1
Functional Bracing of the Upper Extremities	U. of California and U. S. Office of Vocational Rehabilitation	Prosthetics Education Program Rm. B4-229, Medical Center University of California at Los Angeles 24, California	June 13—17, 1960
Upper Extremities Prosthetics	Postgraduate Medical School & College of Engineering New York University	Prosthetics Ed. Program New York University Postgrad. Medical School 550 First Avenue New York 16, N. Y.	May 31—June 10, 1960
	U. of California and U. S. Office of Vocational Rehabilitation	Prosthetics Education Program Rm. B4-229, Medical Center University of California at Los Angeles 24, California	May 9—13, 1960
Lower Extremity Prosthetics	Postgraduate Medical School & College of Engineering New York University	Prosthetics Ed. Program New York University Postgrad. Medical School 550 First Avenue New York 16, N. Y.	Feb. 15—26, 1960 Apr. 18—29, 1960
Above-Knee Prosthetics	Northwestern U. and U. S. Office of Vocational Rehabilitation	Director of Prosthetic Education Northwestern U. Med School 401 E. Ohio St. Chicago 11, Illinois	Dec. 14—18, 1959 June 20—24, 1960
Below-Knee Prosthetics	U. of California and U. S. Office of Vocational Rehabilitation	Prosthetics Education Program Rm. B4-229, Medical Center University of California at Los Angeles 24, California	Dec. 14—18, 1959 Jan. 18—22, 1960 Feb. 29—Mar. 4, 1960 April 4—8, 1960
	Postgraduate Medical School & College of Engineering New York University	Prosthetics Ed. Program New York University Postgrad. Medical School 550 First Avenue New York 16, N. Y.	Dec. 17—18, 1959 Jan. 14—15, 1960 Mar. 17—18, 1960 Apr. 7—8, 1960
	Northwestern U. and U. S. Office of Vocational Rehabilitation	Director of Prosthetic Education Northwestern U. Med School 401 E. Ohio St. Chicago 11, Illinois	Feb. 8—19, 1960 March 7—18, 1960 May 9—20, 1960
Cystic Fibrosis	Children's Medical Center	Shirley M. Cogland Director of Physical Therapy Children's Medical Center 300 Longwood Avenue Boston, Massachusets	Nov. 30—Dec. 4

Schools Offering Courses in Physical Therapy

APPROVED BY THE COUNCIL ON MEDICAL EDUCATION AND HOSPITALS OF THE AMERICAN MEDICAL ASSOCIATION

Schools offering the four year program leading to a baccalaureate degree accept high school graduates and transfer students. Schools offering the 12 to 16 months' program leading to a certificate accept students who have completed all or most of their undergraduate work providing they meet certain course requirements. Recipients of a degree and/or certificate have equal professional status. For specific information regarding each school's entrance requirements, curriculum, tuition and other fees, write to the physical therapy director indicated below. All students should investigate course requirements *early*.

	Degree	*Certificate*
CALIFORNIA		
Mary J. Dodge School of Physical Therapy Childrens Hospital Society 4614 Sunset Boulevard Los Angeles 27	‡	†
Ronald A. Hershey School of Physical Therapy College of Medical Evangelists Loma Linda	†	†
Lucille Daniels Division of Physical Therapy School of Medicine Stanford University Stanford (Palo Alto)	†	†
Margery L. Wagner Curriculum in Physical Therapy University of California The Medical Center San Francisco 22	†	†
Charlotte W. Anderson Department of Physical Therapy University of Southern California Los Angeles 7	†	†
COLORADO		
Dorothy Hoag Curriculum in Physical Therapy University of Colorado Medical School Denver 20	†	†
CONNECTICUT		
James M. Bauer Acting Director School of Physical Therapy U 101 University of Connecticut Storrs	†	
ILLINOIS		
Elizabeth C. Wood Course in Physical Therapy Northwestern University Medical School 303 East Chicago Avenue Chicago 11	†	†
IOWA		
Olive C. Farr Physical Therapy State University of Iowa Hospitals Iowa City		†
KANSAS		
Ruth G. Monteith Section of Physical Therapy Education University of Kansas Medical Center Kansas City 12	†	†
LOUISIANA		
(Not accepting students during 1958-1959) Director School of Physical Therapy Charity Hospital of Louisiana New Orleans 12		†
MARYLAND		
Gladys E. Wadsworth, Ph.D. Department of Physical Therapy School of Medicine University of Maryland Baltimore 1	†	
MASSACHUSETTS		
Adelaide L. McGarrett Physical Therapy Department Boston University Sargent College University Road Boston 15	†	†
Constance K. Greene Department of Physical Therapy *Bouvé-Boston School, Tufts University Medford 55	†	
Shirley M. Cogland *Program in Physical Therapy Simmons College The Fenway Boston 15	†	†
MICHIGAN		
Virginia Wilson Curriculum in Physical Therapy The University of Michigan University Hospital Ann Arbor	†	†
MINNESOTA		
Dale V. Shaffer School of Physical Therapy Mayo Clinic Rochester		†
Wilbur L. Moen Course in Physical Therapy University of Minnesota 860 Mayo Memorial Building Minneapolis 14	†	

* Accepts women students only.

‡ Baccalaureate degree available from an affiliating college or university.

	Degree	*Certificate*
MISSOURI		
Sr. M. Imelda, S.S.M. Department of Physical Therapy St. Louis University 1325 South Grand Boulevard St. Louis 4	†	
Beatrice F. Schulz Department of Physical Therapy Washington University School of Medicine 660 So. Kingshighway St. Louis 10	†	
NEW YORK		
Dorothy L. McLaughlin Russell Sage College-Albany Medical College Division of Physical Therapy Albany 8	†	†
Mary E. Callahan Courses for Physical Therapists Columbia University College of Physicians & Surgeons 630 West 168th Street New York 32	†	†
Elizabeth C. Addoms Physical Therapy Curriculum School of Education, New York University Washington Square East New York 3	†	†
Mildred F. Heap Program in Physical Therapy University of Buffalo 3435 Main Street Buffalo 14	†	†
NORTH CAROLINA		
Helen Kaiser Division of Physical Therapy Box 3403, Duke University Medical Center Durham		†
Margaret L. Moore Section of Physical Therapy School of Medicine University of North Carolina Chapel Hill	†	
OHIO		
Robert D. Kruse, D.P.E. Course in Physical Therapy Frank E. Bunts Educational Institute 2020 East 93rd Street Cleveland 6	‡	†
Gladys G. Woods Curriculum of Physical Therapy Ohio State University University Hospital Columbus	†	†
OKLAHOMA		
Thelma Pedersen School of Physical Therapy University of Oklahoma, Medical Center Oklahoma City 4	†	†
PENNSYLVANIA		
Dorothy E. Baethke Division of Physical Therapy University of Pennsylvania 3901 Pine Street Philadelphia 4	†	†
Kathryn Kelley Division of Physical Therapy D. T. Watson School of Physiatrics Leetsdale	‡	†
PUERTO RICO		
(All classes given in Spanish) Lutgarda V. Piñeiro School of Physical & Occupational Therapy Candelaria & Mandry Streets Stop 22, Santurce	†	†
TEXAS		
Doris E. Porter Grady Vaughn School of Physical Therapy Baylor University Medical Center Dallas 10	†	†
Cecelia J. Lee School of Physical Therapy Hermann Hospital Houston 25	‡	†
Ruby Decker School of Physical Therapy The University of Texas Medical Branch Galveston	†	†
VIRGINIA		
Susanne Hirt School of Physical Therapy Medical College of Virginia Richmond 19	†	
WISCONSIN		
Beth J. Phillips Curriculum in Physical Therapy Marquette University School of Medicine 561 North 15th Street Milwaukee 3	†	
Margaret Kohli Course in Physical Therapy University of Wisconsin Madison 6	†	
U. S. ARMY MEDICAL SERVICE		
*Physical Therapy Course Army Medical Service School Brooke Army Medical Center Fort Sam Houston, Texas Write to: The Surgeon General Department of the Army Washington 25, D. C. Att.: Personnel Division		†

* Accepts women students only.

‡ Baccalaureate degree available from an affiliating college or university.

Please direct all inquiries regarding tuition, entrance requirements and other specific information to the school and *not* to the American Physical Therapy Association.

Abstracts

Prognostic Evaluation for Rehabilitation of Patients with Strokes

Charles D. Bonner (The Rehabilitation Unit of Holy Ghost Hospital, Cambridge, Massachusetts), GERIATRICS, 14:424-428, July 1959.

One may formulate as a general rule that most hemiplegic patients may reasonably be expected to walk out of the hospital as independent individuals, provided that (1) the three positive factors of previous activity, adequate cerebral function, and motivation are present; (2) the two negative factors of spasticity and neurologic signs on the opposite side are absent; and (3) the complications of bladder control, bed sores, and contractures have been prevented. This rule even applies to those who have no return of function in either arm or leg because, in some instances, these patients will actually ambulate without a brace by hyperextension and fixation of the knee, and most of them will be able to walk with a long leg brace after proper ambulation technics have been taught.

The outlook for the stroke patient should be one of encouragement and optimism. Unfortunately, in most hospitals today, the patient with a cerebrovascular accident is still considered primarily a disposition problem. The majority of house staffs who see such patients do so with great disappointment and rarely attempt to conceal their disgust. They feel that a bed is going to be tied up with an uninteresting patient for whom nothing can be done. On the contrary, stroke victims actually present interesting challenges and are a frequently recurring problem to all practitioners. Of greatest importance is the fact that something dynamic and specific can be done for the patient if the doctor is well informed and endowed with vision.

Until the time when every doctor is willing to consider a stroke patient as much of a therapeutic problem as other patients and realizes the positive prognosis that can be offered by early and active treatment, the majority of these patients will continue to be doomed to chronic invalidism in nursing homes. This becomes even more inconceivable when we realize that the economic aspects of rehabilitation are being taken care of quite well by public and private agencies, which enables the family to mobilize its resources during the most incapacitating period of the illness and prepare itself for the simpler care support necessary when the patient returns to independent living at home.

The author pleads that all patients who have suffered a cerebrovascular accident and who meet the above criteria be given the opportunity for rehabilitation. Should the physician be unable to determine the patient's potential for rehabilitation, then he should at least give him the chance of being evaluated by a consultant from a rehabilitation unit. This will assure that, if at all possible, the patient will be able to work toward returning home as an independent person instead of spending the rest of his life as an institutionalized cripple.

Response to Stretch of Hypertonic Muscle Groups in Hemiplegia

J. Brewster Brennan (Department of Physical Medicine, St. James Hospital, London), BRIT. M. J., 5136:1504-1507, June 13, 1959

In an attempt to give relief to a patient who was developing an extreme knee flexion contracture as a result of hemiplegia, the author applied a splint maintaining the knee in extension. The results in reducing the spasticity of the knee flexors and increasing the active power of the quadriceps suggested that similar treatment of other spastic flexors might be efficacious.

The patients chosen were persons whose hemiplegia was of at least six months' duration. The patients in most cases had spastic biceps and the arm was splinted in extension. The splint was kept on continously for about three months, being removed only twice a day for skin care. The time of wearing was decreased gradually for the next month or two and then the splint was discontinued. The untreated joints of the limb served as controls for the experiment.

The examination of the patients followed the method outlined by the author in a previous article. The patient's arc of passive motion with no resistance increased in every case, as did the active range of motion and the power of the antagonist. This change persisted for over a year in many of the cases. There was little or no change in the control muscle groups.

The author formed the opinion that for moderate spasticity 12 weeks of constant stretch and 8 weeks of intermittent stretch would be required for best results. The patients did not mind the immobilization of the limb and were grateful for its improved posture and function at the end of the treatment. This type of treatment might be applicable to spasticity originating from other central nervous system disorders.

Preliminary Institutional Evaluation of a New Drug in Cerebral Palsy

Winthrop Morgan Phelps (Children's Rehabilitation Institute, Inc., Baltimore, Maryland), ARCH. PEDIAT., N. Y. 70:243-250, June 1959

Preliminary testing of any new drug to aid in the treatment of cerebral palsy must determine objectively the drug's effect on large and small muscles and subjectively its effect on the patient's sense of well-being. At the Children's Rehabilitation Institute for Cerebral Palsy, a drug is evaluated on the basis of its place in the Institute's routine, intensive therapy program. The drug must help the patient to accept highly organized therapy, especially physical therapy, to be considered successful.

Forty-two patients of the Children's Rehabilitation Institute, Inc. for Cerebral Palsy participated in this preliminary study of the drug Soma. Ages ranged from 4-14 years, diagnoses covered four broad classifications of cerebral palsy: spasticity, mainly spastic quadriplegia, 17 patients; athetosis, rotary and dystonic, 14 patients; rigidity, intermittent, 9 patients; and ataxia, 2 patients. Almost half the group was speechless. Of the 42 patients, only 3 could walk, feed, and type independently; 2 could dress themselves; and 12 could talk intelligibly.

The test period was divided into three parts: an "on" period of 29 days, an "off" period of 28 days and a final "on" period of 76 days. Patient's reactions were followed for the entire period of 133 days including the "off" period. The patients did not receive other drugs except for routine vitamins and an occasional laxative or aspirin tablet. The dosage was kept constant: one 250 mg. capsule at breakfast and dinner with a glass of water or milk.

Dr. Phelps discusses the types of records kept and the results are presented in table and graph form. No adverse effects were noted with the use of Soma and no toxicity was apparent. Appetite and bowel habits

remained normal in all patients. No behavioral changes were noted in 32 of the 42 patients in the study. In 10 patients, occasional lethargy and drowsiness, or a tendency to sleep more than usual was classified as a side effect of the drug. No patients were removed from the test because of side effects.

The following conclusions are offered by the author:

1. Improvement in spastic patients and those with rigidity was substantially greater than in athetoid patients.

2. Eighty-eight per cent of the spastic patients and 55 per cent of those with rigidity had far better relaxation of the extremities. Braces could be tolerated comfortably for a longer period of time and ability to accept physical therapy was improved.

3. Dosage was kept at a level required to relax the contractures and not increased to the point where it caused weakness.

Wringer Injuries of the Upper Extremity: A Clinical, Pathological and Experimental Study

John P. Adams (Department of Surgery, Orthopedics, The George Washington School of Medicine, Washington, D. C.) and Francis D. Fowler, SOUTH. M. J., 52:798-804, July 1959

A "wringer injury" is defined as a crushing injury to the upper extremity occurring as the arm passes through the rollers of the wringer of an electric washing machine. The authors believe that the apparent slight damage to tissues upon inspection soon after injury are misleading. Prompt treatment and careful observation are required to avoid serious sequelae.

This paper represents a three year experience (1955-1957) at the District of Columbia General Hospital with 137 cases in which adequate follow-up study on 120 is available. All patients received similar care; i. e., hospitalization, triple compression dressings, and elevation of the extremity. One hundred and eleven patients received early care (within 24 hours), 9 patients received late care (28 hours to 4 days after injury). One hundred and twelve children and 8 adults comprise the population in this series.

A review of the literature dealing with wringer injuries and a case report of an incident of Volkmann's ischemic contracture subsequent to a wringer injury are presented.

The authors discuss the complications following inadequate treatment and these are thought to be due to trauma to soft tissue, especially of the muscles and neighboring structures, with secondary edema that may ultimately lead to venous obstruction.

The recommended treatment consisting of hospitalization, promptly applied compression dressings, and close observation has given a normally functioning extremity in 116 of the 120 cases.

An analysis of these cases has emphasized the importance of early recognition and adequate care.

Electromyogram in Peripheral Nerve Complication Following General Surgical Procedures

A. A. Marinacci and Carl W. Rand (Department of Electromyography, Hospital of the Good Samaritan, Los Angeles), WEST. J. SURG., 67:199-204, July-August 1959

Peripheral nerve complication may occasionally follow a general surgical procedure. Most often the symptoms of such complication are temporary; however, in some instances muscular weakness and sensory deficit may persist. This may lead to various medical opinions and speculative diagnoses which sometimes open the door for medicolegal action.

The writers have examined over 500 patients with apparent peripheral nerve complications following general surgical procedures. The following conditions have been found to be the actual etiologic factors: (1) accidental section of a nerve, (2) pressure on a nerve, (3) neuropathy due to pressure, (4) stretch of a nerve as in extreme abduction of the upper extremity, (5) preexisting infectious neuronitis or pressure neuropathy occurring prior to surgical procedure, and (6) hysteria.

Briefly, electromyogram records two specific types of muscle activity, that is, normal and denervated. Denervation activity which is the result of a surgical complication will not be found until 18 to 21 days from date of surgery. Thus, if electromyogram is done immediately after the onset of symptoms it is possible to determine whether or not the affection was present before surgical procedure and was concurrent or coincidental with operative procedure. Electromyogram also comes to the rescue in ruling out hysteria and in localizing the site of the lesion.

Thirteen cases are presented which illustrate each of the above mentioned injuries which may follow a general surgical procedure. In each case it is shown how electromyogram was an aid in determining the cause of the lesion.

The Use of a Caudal Air Bubble in the Control of Alcohol Injection to Relieve Flexion Reflexes

F. Keith Bradford (Division of Neurosurgery, Baylor University College of Medicine, Houston, Texas), J. NEUROSURG., 26:468-470, July 1959

In the past, the absence of a subarachnoid block or the presence of a high subarachnoid block complicated the use of alcohol injection for relief of flexor spasms because the alcohol could not be placed on concentration at the level of the lumbar and upper sacral roots.

Because of this problem, a preliminary method was developed in which the patient is placed in a lateral prone position with the buttocks elevated to 45 degrees, thus allowing removal of the cerebrospinal fluid from the caudal sac and replacement with small amounts of air. The ethyl alcohol then injected would float on the surface of the column of cerebrospinal fluid beneath the column of air and exert its effect on the nerve roots in the desired area.

This procedure was first done in 1957 using a spinal puncture at the twelfth thoracic interspace. Incomplete relief of flexion reflexes was obtained, and the procedure was repeated the following day with abolishment of all reflexes. There has been no recurrence of the reflexes in over a year.

During the past year, 12 patients have been injected in this manner, with a single injection giving abolition of the defense reflexes in most of the patients; however, a second injection was required in a few instances.

There have been no contraindications to placing the level of the spinal puncture at the twelfth thoracic interspace or even higher if necessary.

The procedure is useful in totally paraplegic patients whose flexion reflexes prevent proper skin care. Some patients, who could not walk with braces previously, found it possible to do so following this technic of alcohol injection. Care of the bladder and bowel of the patient has not been complicated by the procedure.

Physical Medicine Following Radical Mastectomies

Leonard J. Yamshon, (Los Angeles), WEST. J. SURG., 67:237-238, July-August 1959

The patient who has had a radical mastectomy presents certain definite problems. In spite of the fact that the cure and longevity rates are among the best for all types of cancers, there is a certain psychologic impact which is superimposed upon the physiologic effects of the operative procedure. The two fundamental psychologic concerns are fear of recurrence and the impact on the patients' vanity.

Briefly, in movement of the arm, four joints are concerned: the sternoclavicular, acromioclavicular, scapulohumeral and the scapulothoracic. In movements these joints act together and any condition affecting them or the muscles controlling them will have its effect on arm movement.

The major postoperative complications consist of frozen shoulder, edema of the upper extremity, and nerve involvement. Because of surgery and postoperative positions other factors are superimposed as (1) surgical trauma, (2) immobilization, (3) pain and muscle spasm, (4) fear of movement and anxiety, and (5) irritation of the shoulder joint.

Contractures have generally been accepted as arising secondary to immobilization of a joint. The causes of muscular contractures are (1) myogenic imbalance (2) spastic contracture, and (3) myositic contracture. These can be prevented by mobilizing the arm using such methods as manual, by pulley, Codman type exercises, and wall climbing. The use of heat is not contraindicated.

Postoperative edema of the arm following radical mastectomy is a common complaint. This may not appear for several weeks after surgery. The cause is believed to be venous obstruction, lymphatic obstruction, or a combination of both. The most effective method of inducing blood flow is by muscular contraction, utilization of gravity, and displacing fluids by massage.

Another common complication is localized infection in the incision and sloughing of the graft. Immersing the patient in a whirlpool is an efficient way to cleanse the area and promote rapid healing.

Since it is frequently easier to prevent complications than to overcome them, the following plan is suggested. It consists of: (1) pre- and postoperative orientation; (2) position of slight abduction postoperatively; (3) clenching and unclenching the fist and flexing and extending the elbow; (4) elevating the arm during sleep; (5) gentle mobilization of the shoulder; (6) moist heat and massage to sore neck and paravacapular muscles; (7) ultrasound therapy if there is shoulder pain and (8) elastic compression bandage should edema start.

Progressive Muscular Weakness and Pain as Symptoms of Adult Fanconi Syndrome

J. W. Worthington, Jr., and D. W. Mulder (Mayo Clinic and Foundation, Rochester, Minnesota), NEUROLOGY, 9:475-477, July 1959

The Fanconi syndrome is a metabolic disorder resulting from defective renal tubule reabsorption leading to renal glycosuria, renal phosphaturia, and often to systemic hyperchloremic acidosis.

The syndrome is most often seen in children, in whom it is usually fatal before puberty, but it also occurs in adults, in whom it is less severe and follows a more chronic course. The symptoms most commonly associated with the adult syndrome are those of osteomalacia; i. e., pain in the lower back and legs, weakness, and abnormal gait. Because these symptoms are also suggestive of primary neurological disease, the underlying disorder is often not recognized.

The patient reported in this article had a two year history of progressive weakness in both legs and pain in the back and left leg. She had a shuffling, unsteady gait and experienced sharp pains in the left thigh, lower back, and right thoracic wall which were precipitated by movement. X rays revealed pseudofractures of the neck of the left femur, the right pubic bone and the seventh rib. Laboratory studies demonstrated a renal disorder of unknown etiology. Although weakness was a major complaint, no evidence of actual muscle weakness was found. After four weeks of therapy consisting of vitamin D and potassium, the patient reported marked improvement.

The authors feel that the symptoms of pain, weakness, and abnormal gait in adult Fanconi syndrome are predominantly due to the osteomalacia and that the weakness and gait are the result of the splinting of painful areas.

Treatment is aimed at the control of the osteomalacia, hypokalemia and systemic acidosis since no curative measures exist for the basic renal tubular defect. Early diagnosis is extremely important.

Muscle Tone and Posture in Infancy

T. T. S. Ingram (Department of Child Life and Health, University of Edinburgh), CEREBRAL PALSY BULLETIN, No. 5:6-15, Spring 1959

The age at which cerebral palsy is first diagnosed has fallen from an average of 3 years and 2 months (1952) to 10 months (1957-58). This improvement in diagnosis may be attributed largely to the more prompt recognition of the early manifestations of the condition, and to the realization that the clinical picture in infancy may be very different from that shown by the patient a few years later. The purpose of this paper is to describe the changes in posture, control of posture, and muscle tone which occur during maturation in normal infants, and to compare them to those observed in patients with bilateral cerebral palsy.

Muscle tone and posture are not isolated physiological phenomena. The maintenance of posture is the function of muscle tone and muscle tone is influenced by changes in posture. In the human infant, changes of posture produce less alteration of muscle tone as the child matures. The primitive reflexes which are characteristic of infancy disappear in a consistent and predictable order as the nervous system becomes more complex and highly organized. Thus, their presence or absence in an individual child are fair indications of the level of motor maturation which he has reached.

The successive stages of progressively more complex neurological organization which occur as higher nervous centers come into action are each evident by specific patterns of motor behavior and characteristic distributions and intensities of muscle tone. At birth the child is usually postureless and flaccid, but with its first breath, posture and tone in the muscles become apparent. The author describes in good detail and with the use of photographs the various stages of neuromuscular maturation observed in the normal infant. He takes the infant through the first flexor stage, the first extensor stage, the second flexor stage and, finally, the second extensor stage. This last stage emerges

toward the end of the first year. This is characterized by the gradual assumption of the erect position.

The changes in posture and alteration in muscle tone which occur in many cases of cerebral palsy may be interpreted in terms of the various stages of neuromuscular maturation observed in the normal infant. The clinical findings in some forms of cerebral palsy may be explained as the result of retarded neuromuscular maturation, or the failure of the centers of higher nervous integration to develop.

The author next describes the clinical manifestations of the diplegia and the patient with dyskinesia. In diplegia, a retarded but orderly progression of neuromuscular maturation through the stages observed in the normal infant may be recognized. However, the postural responses and alteration of muscle tone are grossly exaggerated in degree, and maturation may cease at any stage. Extensor spasms, reflex standing, generalized rigidity, and extensor thrust are some of the particular clinical manifestations apparent in this type of cerebral palsy.

The early development of children who suffer from an excess of involuntary movement as their predominant disability is rather similar to that shown by patients with diplegia. Voluntary activity is interrupted by involuntary movements characterized by transient extensor hypertonus. Some of the involuntary movements may be regarded as fragments of the previously more generalized, massive involuntary extension of the neck, trunk, and limbs.

The author concludes that it is possible to interpret many of the clinical findings of early bilateral cerebral palsy in terms of the characteristic neurological behavior patterns of the normal child.

Lung Volume in Smokers and Non-Smokers

H. Blackburn, J. Brozek and H. Taylor (Laboratory of Physiological Hygiene, University of Minnesota, Minneapolis), ANN. INT. M., 51:68-72, July 1959

Under grants by the Tobacco Industry Research Committee and National Heart Institute the authors have undertaken a study of the differences in lung volume between smokers and nonsmokers.

The 221 subjects, with a mean age of 52 years, were classified as follows: occasional and light, moderate, heavy, all smokers combined, those who had stopped smoking, and nonsmokers. Determinations were made of vital capacity, residual volume, total lung capacity, and ratio of residual volume to total lung capacity.

The results, while not conclusively supporting the theory of cause and effect, seem to strengthen the hypothesis that lifetime smoking has a role in differences in size of lung compartments in the middle aged.

Compartment values in the group that had stopped smoking were similar to those of the nonsmokers. Residual lung volumes were larger in all classifications of smokers than nonsmokers. There was no significant difference in total lung capacity. In the smoker categories the ratio of residual volume to total lung capacity was significantly greater. Of interest was the fact that differences in vital capacity and residual volume were not uniformly proportional to intensity of smoking.

Intracranial Hemorrhage as a Complication of Anticoagulant Therapy

Kevin D. Barrow and Guillermo Fergusson (National Institute of Health, Bethesda, Maryland), NEUROLOGY, 9:447-455, July 1959

Five case studies are discussed in which intracranial hemorrhage accompanied anticoagulant therapy. Postmortem examinations revealed massive hemorrhaging in the brain in all instances. Anticoagulants are believed to have been the ultimate cause of hemorrhage in four cases and a predisposing factor in the fifth. Prothrombin times in all 5 patients were prolonged to or above recommended therapeutic levels at the time hemorrhage occurred.

Current literature reports a high incidence of fatal intracranial hemorrhage in patients suffering from bacterial endocarditis who have been treated with anticoagulant therapy. Hypertension is also mentioned as being frequently associated with spontaneous intracerebral hemorrhage. This association suggests extreme caution in the use of anticoagulants in hypertensive patients. Cerebral infarcts due to emboli and carotid and basilar thrombosis may also be hemorrhagic, and anticoagulant therapy may risk extensive cerebral hemorrhage.

The authors do not propose to deny the value of anticoagulants in treating cerebrovascular disorders, but do indicate that in certain situations cerebral hemorrhage may complicate anticoagulant therapy and often is fatal. Anticoagulant therapy is, however, stressed as being contraindicated in bacterial endocarditis.

Memorandum on Terminology and Classification of "Cerebral Palsy"

Ronald C. MacKeith, Ian C. K. Mackenzie and Paul E. Polani (The Little Club, c/o Guy's Hospital, London, S. E. 1), CEREBRAL PALSY BULLETIN, No. 5:27-35, Spring 1959

The wide divergencies in usage of terms between pediatricians, neurologists and others working with cerebral palsy indicate a need for a commonly agreed classification as well as a definition of *cerebral palsy*. Because cerebral palsy is not an exact term a strict definition is necessary, and should be adhered to for use in (1) research and exchange of information, and in (2) grouping children who have special needs in common. The proposed definition of cerebral palsy is: a persisting qualitative motor disorder appearing before the age of 3 years, due to a nonprogressive interference with development of the brain.

Differentiation of disorders within the group of cerebral palsy should be based on clinical observations, leaving room for revision in light of further knowledge. This seems appropriate when viewing (1) the incomplete state of knowledge of the causes and of the morbid anatomy peculiar to this clinical entity and (2) the trend toward reassessment of some of the basic ideas of neurophysiology and neurology.

Tone (the resistance of muscle to passive movement of the limb at a joint when voluntary control is not in action) is highly valued by neurologists for classification. This fact, and other reasons, suggest that tone is likely to provide the best basis for simple clinical differentiation. Therefore, it deserves priority in the task of defining terms related to cerebral palsy.

Understanding of the largest main group, spastic cerebral palsy, calls for recognition and differentiation of hypertonus. This quality lends itself to the further classification of spasticity and rigidity.

Spasticity, or spastic hypertonus, manifests itself usually by resistance in only one direction by movement

at a joint. This resistance is further classified as (1) yielding slowly to passive movement, (2) giving suddenly and completely, called "give" (the so-called "clasp-knife" phenomenon) and (3) catching suddenly and momentarily, referred to as "catch." The characteristic distribution of spasticity is further modified by posture and age. The significance of the common accompanying signs of clonus and increased tendon reflexes are not easily evaluated. The extensor plantar response has no bearing on the diagnosis of the presence or absence of spasticity or on the type of hypertonus if only the extensor plantar response is present.

Rigidity exhibits itself by increased resistance generally in both directions of passive movement. The two types of rigidity are (1) smooth resistance (so-called "plastic" or "leadpipe" rigidity), and (2) resistance in series of catches (so-called "cogwheel rigidity"). The degree of spasticity and rigidity vary in intensity from time to time, with some relation to emotional changes.

The suggested classfication of cerebral palsy which is based on clinical observations and described in terms of signs and characteristic states may be summarized as follows:

Spastic cerebral palsy
  hemiplegia
  diplegia
  double hemiplegia
Dystonic cerebral palsy
Choreo-athetoid cerebral palsy
Mixed forms of cerebral palsy
Ataxic cerebral palsy
Atonic diplegia

New Technic for Thoracotomy and Chest Closure in the Experimental Animal

Robert A. Salerno (Department of Surgery, Columbia University, New York), J. THORAC. & CARDIOVASCULAR SURG., 38:97-103, July 1959.

In many laboratories, the latissimus and longissimus dorsi, the scalenus, the serratus anterior, the external abdominal oblique, and the rectus abdominus are variously incised during thoracotomy. Also, many operators routinely use subperiosteal rib resection. The author and his coworkers have found that in a large majority of experimental chest procedures such extensive surgery is unnecessary; it adds to the operating time; it entails significant blood loss and trauma; it involves the use of large amounts of foreign body silk; and it makes the closure less secure.

The author has diagramed and explained a new technic for thoracotomy which has been successfully employed in over 150 experimental cardiac operations on dogs. A review of the comparative anatomy of the thorax of man and dog has been given to facilitate the presentation of this new technic.

Careful technic in the retraction of muscle and fascia is the predominant feature of this new method. The latissimus dorsi and the scalenus medius are separated from their local fascial and aponeurotic attachments. These muscles and the adjacent serratus anterior and rectus abdominus are then retracted to allow wide exposure to the intercostal space without rib resection. Thus, transection of all major muscles is completely avoided. Because of careful technic, the closure becomes a simple and secure procedure of reapproximation.

This new technic for thoracotomy has proved to be quick and easy. It avoids unnecessary blood loss and trauma. What is more, it greatly reduces the postoperative complications of the thoracotomy.

Abstracters for November

We are indebted for the carefully prepared abstracts in this issue to the following Association members:

Marilyn J. Anderson	Betty Landen
Mildred Brown	M. Partridge
Shirley Clemenson	Reeta Tullos
Ethel Coeling	Helen Weber
Jean Cuthbertson	Virginia Wirtz

Book Reviews . . . . .

Rheumatoid Arthritis. *By Charles L. Short, M.D., Instructor in Medicine, Harvard Medical School; Walter Bauer, M.D., Jackson Professor of Clinical Medicine, Harvard Medical School and Chief of Medical Services, Massachusetts General Hospital; William E. Reynolds, M. D., Professor of Public Health and Preventive Medicine, University of Washington, Seattle. Cloth; price $7.00. Pp. 480, Harvard University Press, Cambridge, Massachusetts, 1957.*

This study of rheumatoid arthritis was initiated in 1929 as part of a larger program, the aim of which was to care for patients with joint disease and to gain knowledge of the anatomy and physiology of articular structures, the diseases which affect them, and the persons so afflicted. Later the program was extended to include a chemical and physiologic characterization of connective tissue, the end organ or tissue in which the histologic alterations of rheumatoid arthritis and seemingly related diseases are observed. The work was carried out at the Massachusetts General Hospital, using 239 patients on which the diagnosis of rheumatoid arthritis had been substantiated.

A large section of the book is devoted to discussion of diagnostic criteria for selection of patients. In this is set down, precisely and clearly, the definition of rheumatoid arthritis applied to the series to be analyzed. There are other chapters on selection of patients and controls and methods of analysis, scheme of presentation and definition of terms, sex distribution, age at onset, national origin, family history, allergic diseases, illnesses, operations and injuries, occupation, the menopause, prodromal symptoms, precipitating factors, type of onset, joint involvement, and factors which patients believed to have influenced the course of their disease. The latter part of the book discusses constitutional symptoms and manifestations of the disease in various systems of the body.

The reader is immediately impressed by the clear cut, scientific presentation of material. The organization is excellent. At the end of each chapter is a summary paragraph giving conclusions based on the foregoing chapter and suggesting objectives for further study. There are numerous statistical tables and graphs augmenting the text. The bibliography is extensive. Considerable space is devoted to discussion of findings by previous investigators. In the opinion of this reviewer, the book gives excellent coverage of a tremendous number of elements involved in rheumatoid arthritis. Notwithstanding such detailed study, the authors are constantly aware of its incompleteness. They note the need for additional investigations to solve the many unknowns still existing in regard to this complex disease. It is their hope that this study will stimulate others to attempt these.

Physicians or others in the medical field who are interested either

in research or clinical aspects of arthritis should find this book valuable. It is an excellent reference for the physical therapist needing detailed and comprehensive background on the disease.

Cleft Palate and Speech. *By Muriel E. Morley, M.Sc., F.C.S.T. Speech Therapist-in-Charge of Speech Therapy Unit, United Newcastle upon Tyne Teaching Hospitals and the Newcastle upon Tyne Hospital Management Committee Group. Ed. 4. Cloth; price $6.50. Pp. 271. E. and S. Livingstone Ltd., London. (The Williams and Wilkins Co., Baltimore, exclusive U.S. Agents) 1958.*

This book is written for the use of professionals such as the surgeons, orthodontists, and speech therapists, who have equally important functions and responsibilities for the "total rehabilitation" of persons with cleft palates. It should help to strengthen the idea that a team of experts should act as consultants to each other to prevent the professional biases that may operate to influence remedial procedures when they arise from the opinions of the surgeon, orthodontist, or speech therapist.

Miss Morley is a speech therapist at the Cleft Palate Center, New Castle upon Tyne Teaching Hospital, England. She has had the opportunity to observe work of surgeons and orthodontists and to participate in speech therapy and follow-up programs in which children with repaired cleft palates have been seen at regular intervals. She has seen the practical side of cleft palate surgery and is in the position to share with others valuable information to be used in solving the problems associated with cleft palate speech and to help toward a greater understanding of the needs of these patients.

Chapter I presents the following discussions: (1) Growth in Embryo, (2) Classification of Cleft Lip and Palate, (3) Incidence, (4) Etiology, (5) Inheritance. Information has been gathered from many sources.

Chapter II describes the normal palate, orthopharyngeal muscles concerned with speech, the blood supply to the palate, innervation of the palate, the function of the palatopharyngeal sphincter and the importance of the restoration of the physiological mechanism for the production of good speech.

Chapter III, "An Outline Story of the Development of Cleft Palate Surgery," is an excellent overview of operative technics for the speech therapist. The plates and illustrations help to clarify the concepts of these technics. Procedures are described that are devised to improve the production of good speech.

Chapter IV presents the problems associated with cleft palate, namely: feeding, orthofacial growth and development, differences in speech development of normal and cleft palate children, age of operation, and speech results as they are related to age when the operation is delayed beyond the optimum age for the development of speech.

Chapter V is concerned with the typical defects of cleft palate speech. This information should be of special interest to speech therapists who have attempted to evaluate and correct speech problems of the cleft palate child on the basis of the cleft only. In this chapter Miss Morley presents evidence of being a skillful clinician. She emphasizes the importance of careful analysis of speech development of each case before operation as well as an assessment of the results of the surgery as it is related to favorable prognosis for good speech.

Chapters VI and VII take up the general and specific considerations in the treatment of cleft palate speech.

Miss Morley has worked closely with a surgeon, Dr. Wardell. She supports his claim that an operative procedure which produces a competent palatopharyngeal valve is the prime factor which will insure a functional physiological mechanism for the production of good speech. She presents case histories in Chapter VIII that substantiate her point of view concerning the speech of children with cleft palates.

Some readers will differ in point of view with the author concerning the necessity for velar closure for good speech, optimal age for operation and methods of speech therapy. Regardless of this apparent controversy among persons who have studied and have done research on cleft palate speech, one must recognize this book as a valuable contribution to the literature of cleft palate speech. It is comprehensive in coverage of the subject, well written, and contains information which could well be used by all professionals in the area of cleft palate.

This reviewer recommends that all students of speech therapy be encouraged to examine this book carefully when studying cleft palate speech.

Correlative Neuroanatomy and Functional Neurology. *By Joseph G. Chusid, M.D., Attending Neurologist, St. Vincent's Hospital, New York; and Joseph J. McDonald, M.S., M.Sc.D., M.D., Dean of Medical Faculty, American University of Beirut, Lebanon; formerly Professor of Surgery, Columbia University, New York. Ed. 9. Paper; price $4.50. Pp. 344; illus. Lange Medical Publications, Los Altos, Calif., 1958.*

Dr. McDonald, formerly Professor of Surgery at Columbia University, now Dean of the Medical School, American University of Beirut, Lebanon, must be congratulated for bringing out a ninth edition of his *Correlative Neuroanatomy and Functional Neurology*, which was first published twenty years ago. At that time, McDonald, still in his postgraduate training, apparently felt the need to have notes compiling the correlative facts of anatomy and physiology applied in neurology. Together with Jack Lange, he published these notes for the benefit of others. For the last editions McDonald had the collaboration of Dr. Chusid, a well known New York neurologist.

Although originally the book was intended to be only a handy supplement to standard textbooks in neurology, reviewing mainly the anatomical and physiological data important in neurodiagnosis, the book became enlarged from edition to edition and is now regarded by many as a more or less complete compendium suitable for preparation for the examination of the specialty board in neurology. As a compendium, the book deserves high merits for the numerous excellent illustrations, complete tables supplying numerous data, a precisely written text, and a rather even coverage of the whole field. The reviewer has no doubt that any candidate for the neurology specialty board, who has really all the facts contained in the book at his disposal, must be able to pass the examination with high grades. However, on the other hand, and admittedly, this was not the aim of the authors, the book does not replace the need for good textbooks in neuroanatomy, neurophysiology and neurology. Correctly used, a well written compendium like the one reviewed here, can be of immense value for anyone reviewing for his own benefits or in preparation for an examination a subject combining various disciplines. But such a correct use assumes that the reader has good textbooks of the different fields involved

at hand, to be consulted immediately as soon as he realizes that he does not know in detail the basic facts and their interrelations. In this compendium, as in compendia in general, no detailed explanations are offered, and controversial problems as well as theoretical discussions are completely avoided. For use as a compendium, the book of Chusid and McDonald must be highly recommended.

Anomalies of Infants and Children. *By D. McCullagh Mayer, D.D.S., M.D., F.A.C.S., F.I.C.S., Associate Professor of Plastic Surgery, New York University College of Medicine; Associate Attending Plastic Surgeon and Head of Plastic Surgery Service, Flower-Fifth Avenue Hospital, New York. And Wilson A. Swanker, M.D., F.A.C.S., F.I.C.S., Professor of Plastic and Aesthetic Surgery, Ankara University, Turkey; Medical Director of Admiral Bristol Hospital, Istanbul; Associate Professor of Plastic Surgery, New York College of Medicine. Cloth; price $12.00.. Pp. 454; illus. McGraw-Hill, New York, 1958.*

The authors are both professors of plastic surgery, Mayer at New York Medical College and Swanker at Ankara University, Turkey; and both are Associates in Plastic Surgery at New York Medical College. The volume is aimed as a quick reference work for use by student and general practioner. There is a fourfold purpose: to present the anatomic anomaly; to assess the resultant physiological disturbance; to offer the rationale of treatment; and to evaluate the accepted (or optimum) time for repair. An example of the latter is offered when the "patient's contours (are considered) as they will be in adulthood." The rule is as follows: "If skeletal corrections are necessary, it is advisable to defer any attempt at final reconstruction until after puberty."

The book is clearly and well organized. After a consideration of general aspects of pediatric surgery (case history, laboratory tests, preoperative care, anesthesia, postoperative care), and of congenital anomalies (incidence, embryology, mutations, teratology, classification) data are given by logical categories: blood-borne anomalies, birth injuries, skin, vault, face, mouth and oral cavity, nose, eyes and eyelids, ears, neck, trunk, extremities, congenital cancer, burns in childhood, and accidents to children. Each category (each chapter) is followed by a selected bibliography.

This is an easy book to read and to consult. Not only is it clearly and simply written (*not* written-down), but it has a good and logical organization, with interchapter headings and subheadings. All who concern themselves with human form and function may use this book with confidence and with profit.

The Anatomy of the Nervous System. *By Stephen Walter Ranson, M.D., Ph.D., Late Professor Neurology and Director of Neurological Institute, Northwestern University School of Medicine, Chicago. Revised by Sam Lillard Clark, M.D., Ph.D., Professor and Chairman of Department of Anatomy, Vanderbilt University School of Medicine, Nashville, Tennessee. Ed. 10. Cloth; price $9.50. Pp. 622; illus. W. B. Saunders Company, Philadelphia, 1959.*

This now classic textbook has been enlarged and modified with the addition of several new illustrations. The basic organization remains unaltered. Chapter one covers the origin and function of the nervous system. This is followed by the gross anatomy of the central nervous system and its coverings and blood supply. In the copy available to this reviewer several of the otherwise excellent gross brain pictures were poorly printed. The sections on neurogenesis and neurocytology have been enhanced by the addition of many electron micrographs.

The chapters on the spinal nerves and the autonomic nervous system are adequate and much as in earlier editions. As in most texts, the chapter on the automatic system is almost entirely sympathetic with parasympathetic being discussed along with the cranial nerves.

From this point on, the central nervous system is study by levels; the spinal cord, spinal cord tracts, medulla oblongata, pons, midbrain, cranial nerves and their nuclei, cerebellum, diencephalon, and then the cerebral hemispheres. Many good microscopic sections are included along with the text, making it easy for the student to have his atlas figures close at hand.

Special chapters are devoted to the rhinencephalon, cerebral cortex, the great afferent and efferent systems, reflexes and reflex arcs, and clinical illustrations. The text is followed by a good 80 page atlas of brain sections, and a laboratory outline based primarily on the sheep brain. A 25 page bibliography and comprehensive index add to the general usefulness of the book.

As Dr. Clark points out, he has followed closely the spirit of Dr. Ranson's original text. This makes the book a bit conservative but is no detraction from its value.

Many functional and some clinical applications have been incorporated to enliven the predominantly anatomic presentation. This text can be heartily recommended to both the beginning and advanced student as a valuable addition to his library.

The reviews published here do not necessarily represent the opinions of the American Physical Therapy Association.

Book Reviewers for November

C. Murphy Combs, Ph. D., Associate Professor of Anatomy, Northwestern Medical School, Chicago.

Elsie M. Edwards, Ed. D., Assistant Professor of Speech and Teacher Education, Michigan State University, Lansing.

Ernest Fischer, M. D., Professor of Physiology, Medical College of Virginia, Richmond.

Wilton Marion Krogman Ph. D., Professor of Physical Anthropology, Graduate School of Medicine, University of Pennsylvania, Philadelphia.

Mary Singleton, Graduate Student, Duke University, OVR Trainee; formerly, Coordinator of Therapy, Department of Physical Medicine, Georgia Warm Springs Foundation.

What's New . . . . . .

For more information on items write to The Physical Therapy Review, 1790 Broadway, New York 19, N. Y.

New items which may be of interest to physical therapists will be mentioned in these pages each month. The accompanying explanations are made by the manufacturers and have not been investigated by the *Physical Therapy Review*.

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Nov. 9–13	American Hospital Association Institute for Physical Therapists, Rice Hotel, Houston
Nov. 16–19	Southern Medical Association, Municipal Auditorium, Atlanta
Nov. 29–Dec. 2	National Society for Crippled Children and Adults, Palmer House, Chicago
Nov. 30–Dec. 2	American Academy for Cerebral Palsy, Statler Hotel, Los Angeles
Dec. 1–4	American Medical Association, Clinical Meeting, Dallas
Dec. 26–31	American Association for the Advancement of Science, Chicago

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Positions Available

QUALIFIED PHYSICAL THERAPIST to join staff of three therapists in private children's hospital treating principally cerebral palsy and polio cases on in- and outpatient basis. Salary range $325 for inexperienced to $400 for experienced. Free lunches and laundry of uniforms. For details write: Mrs. Elizabeth G. May, Administrator, Crippled Children's Hospital, 1316 Third Street, Corpus Christi, Texas.

P. T.'s WANTED IMMEDIATELY: ASSISTANT HEAD and STAFF THERAPIST. Cerebral Palsy Residential School; 45 beds, ages 5-12. Salary for Asst. Head dependent on training and experience, ranging from $4140-4680 per year while Staff Therapist requires no experience; salary ranging from $3800-4320 per year. Located on Gulf of Mexico, 50 miles from Houston. Sick leave, Xmas, Easter and summer vacation, Savings Plan. Affiliated with University of Texas Medical School and all three of Texas P. T. Schools; 5-day week. Must be member of ARPT and/or APTA. Both positions assist in supervision of P. T. students. Apply to: Miss Robertine St. James, Superintendent, Moody State School for Cerebral Palsy, Galveston, Texas.

WANTED: Registered Physical Therapists to work with an agency offering a program of comprehensive nursing care and rehabilitation. Will work with a staff of 12 physical therapists and will have opportunities for informal teaching and caring for patients in the home. Liberal personnel policies with salary based on experience. Apply to Executive Director, Visiting Nurse Association, 59 East Monroe St., Chicago 3, Illinois.

QUALIFIED PHYSICAL THERAPIST for staff position in a 410-bed hospital. Completely remodeled and well equipped department, wide variety of cases divided equally between hospital and outpatient. Forty hour week, paid vacation, sick leave and holidays; salary open, depending upon qualifications and experience. Excellent opportunity in a growing community located in the Valley of the Sun, winter capitol of the Southwest. Apply Personnel Director, Good Samaritan Hospital, Phoenix, Arizona.

Male or Female

PHYSICAL THERAPIST — For general hospital near N. Y. C. Affiliated residence N. Y. U.-Bellevue. Active physical medicine and rehabilitation program. Start $4150, annual increases to $4960. Must be eligible for registration in New York State. Liberal benefits. Contact Personnel, Supervisor, Grasslands Hospital, Valhalla, N. Y. LY 2-8500, Ext. 61.

STAFF physical therapist: Salary open, 40-hour week, two weeks' vacation with pay, holidays, sick leave, Blue Cross, social security, industrial insurance. Private Practice Board Physiatrist; fully equipped modern offices; regular salary increments at six months and one year and thereafter on merit. For further details write William J. LaJoie, M.D., 2021 North Central Avenue, Phoenix, Arizona.

PHYSICAL THERAPIST I. Immediate opening in large general hospital; salary range $413-499 per month; good personnel policies; 11 holidays; vacation and sick leave. Must be registered or eligible. Apply personnel Director, 732 East Main St., Stockton 2, Calif.

QUALIFIED physical therapist for rehabilitation of children with orthopedic and neurological conditions. Wide variety of patients. Good starting salary with merit increases. Five-day week. Annual two week paid vacation. Eleven paid holidays. Sick leave. Excellent retirement plan. Continuous interdisciplinary teaching program. Write: Linda Wessel, Director of Physical Therapy, Illinois Children's Hospital-School, 2551 North Clark Street, Chicago 14, Illinois.

WANTED: Registered physical therapist (female) for work in growing clinic with 2 orthopedic surgeons, a new physical therapy department and affiliation with a modern hospital. Salary according to experience; 6 paid holidays, 2 weeks vacation and insurance benefits. Address: Mr. Elmer Berg, Business Manager, Gundersen Clinic, La Crosse, Wisconsin.

QUALIFIED physical therapist for outpatient center for cerebral palsied children. Well equipped center established 1950 supported by Chest. Program also includes nursery school and class for mentally retarded children. Pleasant surroundings, competent and congenial staff, opportunity to use initiative. Four-week summer vacation, generous Christmas holiday, social security, sick leave, annual increments. Starting salary dependent upon experience. Interview arranged at our expense. Write Mr. John J. Evans, Executive Director, United Cerebral Palsy, 3601 Victory Parkway, Cincinnati 29, Ohio.

CHIEF or STAFF PHYSICAL THERAPIST: 510-bed General Hospital, good location. Paid vacation, sick leave, holidays and retirement plan. Apply Spartanburg General Hospital, Spartanburg, S. C.

(continued on next page)

Classified WANT-ADS

New Rates

$3.00 for the first line
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Typewrite your advertisement carefully and count 50 characters and spaces per line.

ALL WANT-ADS MUST BE PAID FOR IN ADVANCE. Make checks or money orders payable to the American Physical Therapy Association.

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Address replies to ..... care of **The Physical Therapy Review, 1790 Broadway, New York 19, N. Y.**

IMPORTANT

It is understood and agreed that the publisher shall have the right to reject or change the wording of any advertisement which in the opinion of the Editorial Board shall not be in agreement with the ethical standing of this publication.

WANTED: PHYSICAL THERAPIST—FEMALE: For 350-bed fully accredited community hospital. Both hospital and outpatient cases. Located on Long Island Sound, one hour from New York City. Liberal fringe benefits, including pension plan. Excellent meals at low cost. Salary from $3744 to $4680 per annum. Apply Personnel Director, the Norwalk Hospital, Norwalk, Connecticut.

PHYSICAL THERAPIST: New York Polyclinic Medical School and Hospital expanding physical medicine and rehabilitation dept. General rehab. problems. Good salary with increments, sick leave, paid vacations. Apply Personnel office, 345 W. 50 St., NY 19, NY. CO 5-8021.

WANTED: Qualified physical therapist for expanding outpatient Rehabilitation Center, treating both adults and children. Forty-hour, five-day week. Contact Clinton Owens, Rehabilitation Center, 316 Longwood Drive, S.W., Huntsville, Alabama.

GRADUATES OF APPROVED SCHOOLS FOR PHYSICAL THERAPISTS, *new legislation provides that* under certain conditions, *you may now practice in California pending your registration in this State.* Positions open in State Hospitals, the Veterans Home and special schools for handicapped children. Starting salaries $436.00 and up; liberal employee benefits; promotional opportunities. Streamlined examinations twice a month in San Francisco and Los Angeles, and on request in other states near candidates residence. Write State Personnel Board, 801 Capitol Avenue, P. T. 71, Sacramento, California.

IMMEDIATE OPENING for female staff physical therapist for children's hospital; 40-hour week, sick leave, 3 wks. vacation, salary commensurate with experience. Write Miss Nellie Koster, R.N., Director, Mary Free Bed Guild Children's Hospital and Orthopedic Center, 920 Cherry St., Grand Rapids 6, Michigan.

STAFF PHYSICAL THERAPIST for 400-bed private general hospital with large active volume outpatient department. Liberal salary range and employee benefits. May be experienced or recent graduate—licensed in Wisconsin or eligible to take license examination. Excellent working conditions in one of midwest's foremost institutions. Centrally located in city and convenient to outstanding residential and shopping facilities. Contact Personnel Director, Milwaukee Hospital, 2200 W. Kilbourn Ave., Milwaukee 3, Wisconsin.

STAFF PHYSICAL THERAPIST for Cerebral Palsy School-Clinic, of Atlanta, Inc. Day School program, clinic and outpatient services for 100 children ranging in age from 18 months to 18 years. Five-day work week, public school holidays, two weeks' summer vacation, sick leave, salary open. Send qualifications and work summary to: Mrs. Harold M. Seymour, Administrator, the Cerebral Palsy School-Clinic of Atlanta, 1815 Ponce de Leon Avenue, N.E., Atlanta 7, Georgia.

STAFF PHYSICAL THERAPIST: State Crippled Children's Program, P. T. Clinics held in various health departments. Merit System status, retirement benefits, liberal vacation and sick leave. Salary range $4512-5640. Travel expenses paid. Responsible, challenging and secure position. Write: Director of Personnel, State Health Department, Richmond, Virginia.

STAFF PHYSICAL THERAPISTS for progressive rehabilitation program in expanding Chronic Disease Hospitals in Baltimore and Hagerstown, Maryland. Starting salary $4,040.00 with annual increments, vacation and sick leave. New and well equipped clinics. Montebello used as teaching hospital for medical students, nurses and physical therapists. Inexpensive living quarters available. Apply Dr. Florence Mahoney, Director Rehabilitation Medicine, or Miss Dorothea Barthel, Supervising Physical Therapist, Montebello Hospital, 2201 Argonne Drive, Baltimore 18, Md.

WANTED: Registered Physical Therapist for general patient work. Salary open with personnel benefits. Write: Personnel Office, St. Patrick's Hospital, Lake Charles, Louisiana.

Physical Therapist for a VISITING NURSE ASSOCIATION carrying on comprehensive services to the sick in their homes on a visit basis. Stimulating community program expanding its services to the chronically ill. Retirement plan, Social Security, forty-hour week, one month's vacation. Beginning salary based on experience; annual salary increments. Apply Executive Director, Visiting Nurse Association of Allegheny County, 200 Ross Street, Pittsburgh 19, Pa.

IMMEDIATE OPENING for qualified physical therapist in modern 360-bed general hospital. Individual selected to become head of department in June 1960 due to retirement of present personnel; 40 hour week, paid vacations, sick leave, holidays. Salary open based on training and experience. Complete maintenance available for single person if desired. Send application and supporting data to Director, Eastern Maine General Hospital, Bangor, Maine.

STAFF PHYSICAL THERAPISTS: needed for Iowa Methodist Hospital's newly opened 120-bed Younker Memorial Rehabilitation Center. Excellent chance for advancement. Competent supervision, professional staff and assistants. Both in- and outpatient work. Salary range $365-$420; 40-hour week, vacations, sick leave, holidays, insurance, other benefits. Inquire Personnel Department, Iowa Methodist Hospital, Des Moines, Iowa.

STAFF THERAPIST for position in 575-bed JCAH accredited general hospital; 40-hour week. No week ends. Excellent salary and personnel policies. Furnished apartment at very reasonable rent. Write Personnel Director, St. Luke's Hospital, Duluth 11, Minnesota.

PHYSICAL THERAPIST for outpatient Rehabilitation Center directed by physiatrist. Wide variety of treatment program. Coordinated physical, occupational, speech-hearing, psychological, vocational and social services. Excellent personnel policies and working conditions. Contact R. A. Silvanik, Administrator, The Rehabilitation Center of Summit County, Inc., 326 Locust Street Akron 2, Ohio.

STAFF OPENING at Brevard Crippled Children's Clinic, Melbourne, Florida. This is a rapidly expanding area which presents many opportunities; wide variety of cases (both children and adults). Good starting salary and increments. Write John Cusson, P.O. Box 1314, Melbourne, Florida.

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NEW PRODUCTS FROM

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To make sure that Burdick electromedical equipment is always among the finest available, our research and engineering departments constantly strive to improve existing units and to develop new products.

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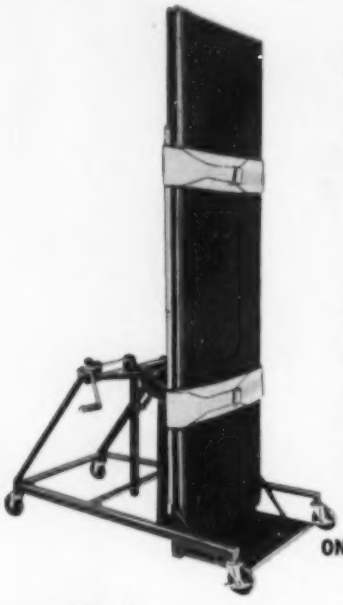
THE *New* PRESTON STANDING TABLE

Preston Catalog Number PC 7194-U

This newly developed Standing and Treatment Table is manually operated by means of a hand crank. The sturdy base, constructed of angle iron, has a brown enamel crinkle-finish. The table top is 24" wide; 78" long; 32" high, and is upholstered with durable waterproof leatherette.



features . . .

EASE OF OPERATION—A special worm and gear arrangement permits tilting the table with minimum effort. The crank handle is near the top, obviating the need for the therapist's bending.

TILTS FROM HORIZONTAL TO VERTICAL position (from 0—90 degrees). Locks automatically at any desired angle.

EASY PASSAGE through narrow doorways and corridors. Over-all width held down to 29". Crank handle folds out of the way.

EASY TRANSFER of patient from bed or stretcher to table. Height of top—32" from floor.

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COMFORT TO PATIENT is assured by upholstered top of durable waterproof leatherette. Footboard has a non-slip surface. Two heavy-duty restrainer straps hold patient securely on table. Square rails on each side of table permit placing restrainer straps or auxiliary equipment in any desired position.

PROTRACTOR to indicate degree of tilt from 0 to 90 degrees.

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ONE YEAR GUARANTEE AGAINST DEFECTS IN MATERIAL OR WORKMANSHIP

THE *Only* QUALITY TABLE AT AN *Economy Price!*

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PC 7194-U Standing Table, including Upholstered Top. Complete with 4" casters and two Restrainer Straps

PC 7195S Additional Restrainer Straps 7.50

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